

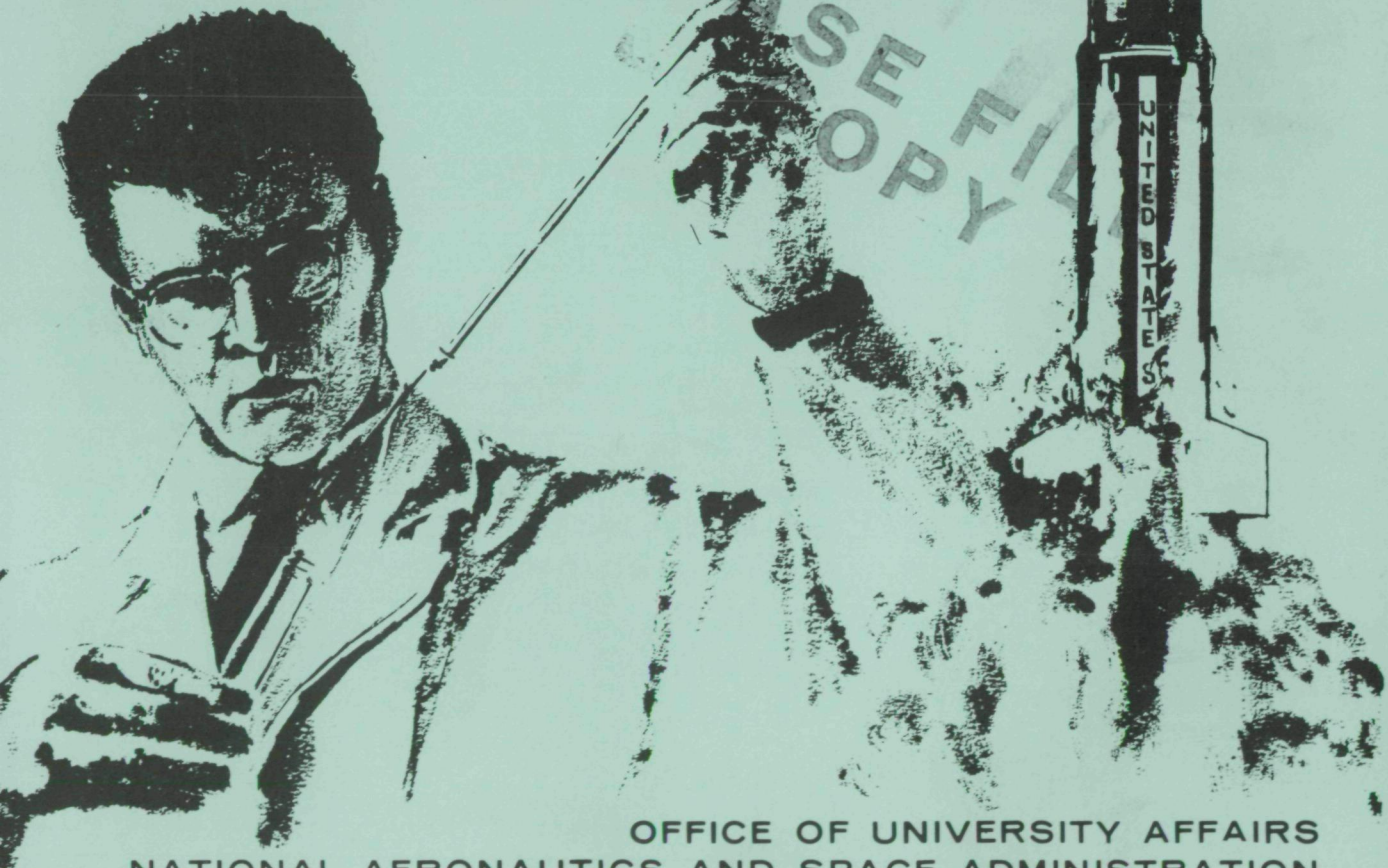
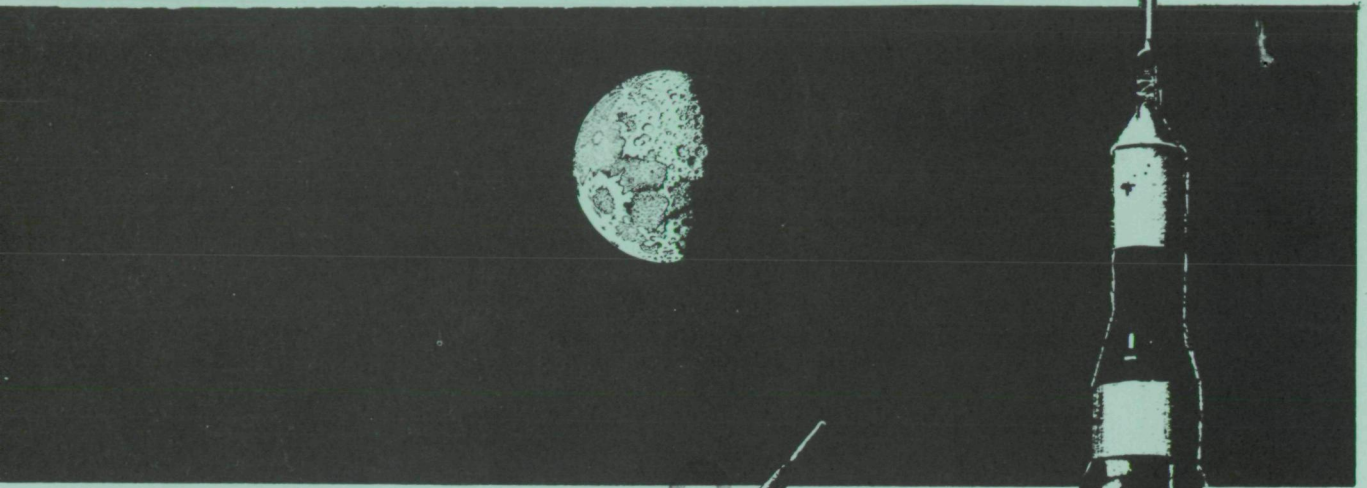
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NASA'S UNIVERSITY PROGRAM

ACTIVE GRANTS & RESEARCH CONTRACTS



OFFICE OF UNIVERSITY AFFAIRS
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, D. C. 20546

FISCAL YEAR 1975

IMPORTANT NOTICE

This report is compiled primarily from information obtained from two internal NASA sources:

1. "CASE Report on Support of Colleges and Universities" (NASA Form 1356).
2. "Individual Procurement Action Report" (NASA Form 507).

Therefore, other sources should be used for completing Forms 507 or 1356.

NASA'S UNIVERSITY PROGRAM
ACTIVE GRANTS AND RESEARCH CONTRACTS
FISCAL YEAR 1975

National Aeronautics and Space Administration
Office of University Affairs
Washington, D.C. 20546

Acknowledgements

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FOREWORD

As basic policy NASA believes that colleges and universities should be encouraged to participate in the nation's space and aeronautics program to the maximum extent practicable. Indeed, universities are considered as partners with government and industry in the nation's aerospace program. NASA's objective is to have them bring their scientific, engineering, and social research competence to bear on aerospace problems and on the broader social, economic, and international implications of NASA's technical and scientific programs. It is expected that, in so doing, universities will strengthen both their research and their educational capabilities to contribute more effectively to the national well-being.

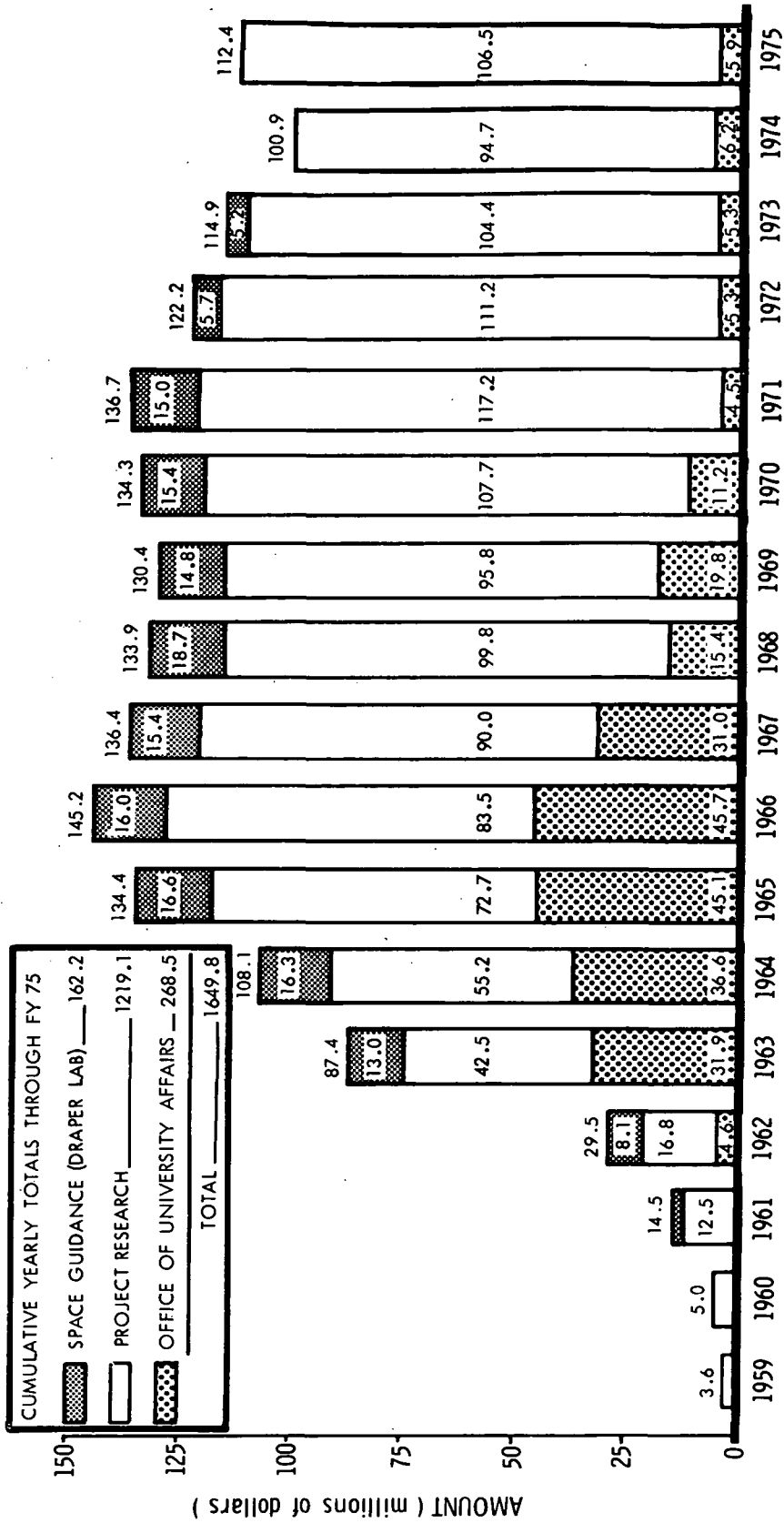
NASA Field Centers and certain Headquarters Program Offices provide funds for those R&D activities in universities which contribute to the mission needs of that particular NASA element. Although NASA has no predetermined amount of money to devote to university activities, the effort funded each year is substantial. (See the bar chart on the next page). This annual report is one means of documenting the NASA-university relationship, frequently denoted, collectively, as NASA's University Program.

The Office of University Affairs (OUA) serves as a focal point for NASA's relationships with colleges and universities. One of its roles is to provide information on the NASA University Program. The present document is designed to serve several purposes and a wide range of audiences from private individuals to NASA employees. The emphasis is on the technical content of the program, rather than on fiscal data, which is available separately from OUA. As some terminology will not be familiar to all readers, a "User's Guide" is included to facilitate the fullest use of the material related to the interests of any particular reader.

Information on obtaining reports resulting from these projects may be obtained from: NASA, Scientific and Technical Information Office, Code KS, Washington, DC 20546.


Frank D. Hansing, Director
Office of University Affairs

NASA OBLIGATIONS TO UNIVERSITIES



FISCAL YEARS

Notes: 1. Excludes obligations to or through Federally Funded Research and Development Centers (JPL, Lincoln Lab., SREL).

2. Change in status from "university" to "non-profit" for three organizations accounts for \$10.1M of the difference between FY 73 and FY 74. (Draper Lab, ERI, Dudley Observatory).

3. Office of University Affairs includes 1962-1971 Sustaining University Program.

Source: NASA Office of University Affairs

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This report includes data on projects active during Fiscal Year 1975.

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II. NASA Installations

NASA installations are included in the citation both as abbreviations (item 9) and as codes (items 11a). The following listing of installations will be useful to those desiring further information on specific projects.

Abbrev.	Code	Installation Name and Address	Telephone Number for Information
ARC	21	Ames Research Center NASA Moffett Field, CA 94035	415/965-5000
FRC	24	Flight Research Center NASA P.O. Box 273 Edwards, CA 93523	805/258-3311
GSFC	51	Goddard Space Flight Center NASA Greenbelt, MD 20771	301/982-5042
JPL	55	Jet Propulsion Laboratory 4800 Oak Grove Drive Pasadena, CA 91103	213/354-4321
JSC	72	Johnson Space Center NASA Houston, TX 77058	713/483-3111
KSC	76	Kennedy Space Center NASA Kennedy Space Center, FL 32899	305/867-7113
LARC	23	Langley Research Center NASA Langley Station Hampton, VA 23665	804/827-1110
LERC	22	Lewis Research Center NASA 21000 Brookpark Road Cleveland, OH 44135	216/433-4000
MSFC	62	Marshall Space Flight Center NASA Marshall Space Flight Center, AL 35812	205/453-2121
NSTL	64	National Space Technology Laboratories NASA Bay St. Louis, MS 39520	601/688-2211
WFC	53	Wallops Flight Center NASA Wallops Island, VA 23337	804/824-3411

WTR	--	Western Test Range P.O. Box 425 Lompoc, CA 93436	805/866-1611
HQ	10	NASA Headquarters Washington, DC 20546	202/755-2320

The abbreviation for NASA Headquarters, HQ, usually carries a suffix, for example HQ-P, which denotes a particular office and general area of responsibility. (P is the Office of University Affairs.) A full listing of the suffix letters and information on NASA's organizational structure may be found in the NASA Headquarters Telephone Directory. (The Directory is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.)

III. CASE Fields of Science and Engineering

The National Science Foundation (NSF) on behalf of the Committee on Academic Science and Engineering (CASE) of the Federal Council for Science and Technology (FCST) operates a government-wide system for collecting and analyzing data on support to colleges and universities. Participating agencies report annually to NSF which in turn issues *Support to Universities, Colleges and Selected Nonprofit Institutions*. The CASE Fields, used in the extensive tabulations contained in that document, form the only consistent classification system for government sponsored research. The fields are listed in full in Appendix B.

IV. Cross-Indexes

The cross-indexed Appendices are related to the citations (descriptions) by the accession number (item 3). The accession number has meaning only in this report; it is in no way permanently associated with nor does it uniquely identify a specific grant or contract anywhere except in the present report. Accession numbers are assigned sequentially to the citations, beginning with 1000. Thus, when an entry of interest is identified in any one of the Appendices, the associated accession number allows ready location of the full description in the body of the report.

- Appendix A – Given only the grant or contract number this index enables the reader to locate the citation. The first page tells how to distinguish grants from contracts.
- Appendix B – This index provides rapid access to all projects in a particular area of endeavor, as defined by the CASE Fields. This listing is also easily used to determine the institutions and principal investigators conducting NASA projects in a field.
- Appendix C – The types of effort sponsored by each NASA installation may be determined from this index.
- Appendix D – This index is included primarily for the convenience of internal NASA readers. However, the RTOP, per se, may be of considerable interest to external users. See V, below.

V. Source Code and RTOP

The last line of the citation (item 11) contains 1-3 sets of numbers in parenthesis. By interpreting the coding a great deal of additional information on a project may be obtained. The first set is current and is the most useful; the second and third sets, if present, generally represent historical data.

Each set of numbers is further divided into two groups separated by a blank space. The first group contains source coding, while the second is the "Research and Technology Operating Plan" (RTOP).

Source Coding (Item 11a)

The first two-digit number identifies the NASA installation (by the code given in II, above) which has most recently added funds to the project. Disagreement between this installation and the technical officer location usually indicates that responsibility for a project is being transferred.

The second number identifies the major NASA Program Office responsible for the research, as follows: 200-299, Office of Technology Utilization; 300-399, Office of University Affairs; 400-499, Office of Energy Programs; 500-599, Office of Tracking and Data Acquisition; 600-699, Office of Applications; 700-799, Office of Aeronautics and Space Technology; 800-899, Office of Space Science; and 900-999, Office of Manned Space Flight.

RTOP (Item 11b)

The RTOP, "Research and Technology Operating Plan," number indicates a broad technical area in which NASA desires to achieve certain objectives. Numerous projects, conducted both in-house and out-of-house and with all classes of performers may contribute to the objective of a single RTOP. Detailed descriptions of the RTOPs, including names of responsible individuals and extensive cross-indexing, are published annually. The *Research and Technology Operating Plan Summary* may be purchased from the National Technical Information Service (NTIS), Springfield, Virginia 22161.

NASA'S UNIVERSITY PROGRAM

ALABAMA

NGR 01-001-003 Alabama A&M University 1000
 Radiation effects in the metabolism of phospho-lipids in the central nervous system of-albino rats
Period Obligations
 05/10/65-06/15/76 FY75: TOTAL: \$53,738
Prin. Invest. NASA Tech. Officer CASE Category
 Lee, C. O. HQ-P/Pohly, J. G. 59-Life Sci, NEC
 (10-770 127-00-00)

NGR 01-001-013 Alabama A&M University 1001
 Mhz shuttle, station and satellite communications analysis
Period Obligations
 03/30/71-03/31/74 FY75: TOTAL: \$37,698
Prin. Invest. NASA Tech. Officer CASE Category
 Lowsine, L. HQ-P/Pohly, J. G. 41-Aero Engr
 (62-920 982-52-00) (62-920 982-00-00)

NGR 01-001-021 Alabama A&M University 1002
 Performance analysis & preliminary system configuration
Period Obligations
 03/05/73-07/31/74 FY75: TOTAL: \$21,491
Prin. Invest. NASA Tech. Officer CASE Category
 Weathers, G. D. HQ-P/Pohly, J. G. 46-Mech Engr
 (10-371 340-00-00)

NGR 01-001-023 Alabama A&M University 1003
 Development of remote sensing applications for natural resource study and management
Period Obligations
 06/13/73-06/15/76 FY75: \$36,671 TOTAL: \$81,124
Prin. Invest. NASA Tech. Officer CASE Category
 Sharma, G. C. MSFC/Downs, S. W. 51-Biology
 (62-371 340-00-00) (62-680 177-54-71) (62-680 177-54-72)

NGR 01-001-024 Alabama A&M University 1004
 Rocket engine thrust calculation and analysis
Period Obligations
 07/01/73-08/31/74 FY75: TOTAL: \$21,428
Prin. Invest. NASA Tech. Officer CASE Category
 Saha, H. HQ-P/Pohly, J. G. 41-Aero Engr
 (10-371 340-00-00)

NGR 01-001-025 Alabama A&M University 1005
 Investigation of water quality parameters at selected points on Tennessee River
Period Obligations
 09/01/73-10/01/75 FY75: \$24,355 TOTAL: \$46,913
Prin. Invest. NASA Tech. Officer CASE Category
 Manger, M. C. MSFC/McDonough, G. F. 39-Env Sci, NEC
 MSFC/Kent, M. I.
 (62-371 340-00-00)

NSG 8001 Alabama A&M University 1006
 Application of transition radiations to detect charged particles in cosmic rays
Period Obligations
 01/02/74-04/01/78 FY75: TOTAL: \$16,818
Prin. Invest. NASA Tech. Officer CASE Category
 George, M. C. MSFC/Parnell, T. A. 11-Astronomy
 MSFC/Kent, M. I.
 (62-371 340-00-00)

NSG 8011 Alabama A&M University 1007
 Application of self-induced transparency and self-trapping to reduce the degradation of laser pulses
Period Obligations
 07/01/74-10/01/75 FY75: TOTAL: \$19,644
Prin. Invest. NASA Tech. Officer CASE Category
 Lee, C. T. MSFC/Kurtz, R. L. 13-Physics
 MSFC/Kent, M. I.
 (62-371 340-00-00)

NSG 8013 Alabama A&M University 1008
 Performance analysis and design study for a proposed HEAO tracking and data relay satellite data communications link
Period Obligations
 07/01/74-10/01/75 FY75: TOTAL: \$24,118
Prin. Invest. NASA Tech. Officer CASE Category
 Weathers, G. MSFC/Lowrey, D. O. 45-Elec Engr
 (62-371 340-00-00)

NSG 8022 Alabama A&M University 1009
 Rocket engine thrust chamber wall temperature distribution calculation and analysis
Period Obligations
 10/17/74-09/01/75 FY75: \$23,554 TOTAL: \$23,554
Prin. Invest. NASA Tech. Officer CASE Category
 Saha, H. MSFC/Gross, K. W. 13-Physics
 MSFC/Kent, M. I.
 (62-371 340-00-00)

NAS 8-28058 Athens College 1010
 Chemical analysis of outgassing contaminant on spacecraft surfaces
Period Obligations
 10/27/71-04/01/76 FY75: \$7,117 TOTAL: \$79,947
Prin. Invest. NASA Tech. Officer CASE Category
 McNutt, R. C. MSFC/Jex, D. W. 13-Physics
 MSFC/Kroes, R. L.
 (62-704 506-16-35) (62-950 951-00-00) (62-980 975-72-00)

NAS 8-30561 Athens College 1011
 Solidification kinetics
Period Obligations
 06/25/74-09/25/75 FY75: TOTAL: \$22,067
Prin. Invest. NASA Tech. Officer CASE Category
 McNutt, R. C. MSFC/Zwiener, J. M. 13-Physics
 Short, W. A. MSFC/Ruff, R. C.
 (62-740 114-00-00)

**NASA'S UNIVERSITY PROGRAM
ALABAMA (Continued)**

NAS 8-30813 **Athens College** **1012**
Optical granting analyzer studies
Period *Obligations*
07/23/74-12/23/74 **FY75: \$9,265** **TOTAL: \$9,265**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Short, W. **MSFC/Linton, R. C.** **13-Physics**
McNutt, R. **MSFC/Zwiener, J. M.**
McDonald, J.
(62-704 502-21-28) (62-950 951-00-00)

NAS 8-30880 **Athens College** **1013**
Determination of exploratory loading techniques for holographic non-destructive testing
Period *Obligations*
07/01/74-01/31/76 **FY75: \$16,062** **TOTAL: \$16,062**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Martin, A. M., III **MSFC/Moore, W. W., Jr.** **13-Physics**
(62-704 502-21-28)

NAS 8-20765 **Auburn University** **1014**
Frequency Modulated (FM) telemetry systems
Period *Obligations*
05/22/67-06/15/74 **FY75: \$15,182** **TOTAL: \$232,170**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Irwin, J. D. **MSFC/Emens, F. H.** **45-Elec Engr**
James, S.
(62-500 150-00-00)

NAS 8-26193 **Auburn University** **1015**
Research work pertaining to telemetry measuring and radio frequency systems
Period *Obligations*
06/18/70-09/17/75 **FY75:** **TOTAL: \$120,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Honnell, M. A. **MSFC/Lowrey, D. O.** **45-Elec Engr**
(62-950 951-15-00) (62-910 933-50-00) (62-500 150-00-00)

NAS 8-26579 **Auburn University** **1016**
Study of thermal conductivity of heterogeneous mixtures
Period *Obligations*
10/23/70-09/15/74 **FY75:** **TOTAL: \$43,566**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Vachon, R. I. **MSFC/Jones, B. P.** **13-Physics**
 MSFC/Miller, E. R.
(62-704 502-21-27) (62-740 129-00-00)

NAS 8-26930 **Auburn University** **1017**
Advanced computer system studies and development
Period *Obligations*
03/29/71-03/15/76 **FY75: \$16,225** **TOTAL: \$71,225**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Carroll, B. D. **MSFC/White, J. B.** **45-Elec Engr**
Irwin, J. D.
(62-980 909-54-33) (62-950 951-15-00) (62-910 933-50-00)

NAS 8-29852 **Auburn University** **1018**
Investigation of problems involving calculation of space tug's position in an inertial coordinate system
Period *Obligations*
06/20/73-11/19/75 **FY75:** **TOTAL: \$74,394**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Boland, J. S., III **MSFC/Craighead, P. T.** **49-Engr, NEC**
 MSFC/Singley, M. E.
(62-980 909-55-05)

NAS 8-29856 **Auburn University** **1019**
Detection of soil acidity
Period *Obligations*
07/01/73-06/30/76 **FY75: \$15,000** **TOTAL: \$44,900**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hagler, T. B. **MSFC/Downs, S. W.** **51-Biology**
 MSFC/Paludan, C. T.
(62-680 160-75-15)

NAS 8-29881 **Auburn University** **1020**
Econometric analysis of materials processing in space
Period *Obligations*
03/12/74-09/15/75 **FY75:** **TOTAL: \$74,324**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Vachon, R. I. **MSFC/McKannan, E. C.** **72-Economics**
 MSFC/Wheeler, J.
(62-630 179-53-99)

NAS 8-30248 **Auburn University** **1021**
Terminal guidance and navigation for comet and asteroid rendezvous
Period *Obligations*
12/16/73-06/15/75 **FY75:** **TOTAL: \$25,718**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bennett, A. G. **MSFC/Duncan, J. R., Jr.** **41-Aero Engr**
 MSFC/Blair, J. C.
(62-840 684-30-90)

NAS 8-30654 **Auburn University** **1022**
Development of Alabama resources information management system
Period *Obligations*
04/23/74-08/31/76 **FY75: \$31,500** **TOTAL: \$61,500**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Vachon, R. I. **MSFC/Cummings, R. E.** **21-Mathematics**
Herring, B. E. **MSFC/Messer, C. W.**
(62-680 177-52-71)

NAS 8-31190 **Auburn University** **1023**
Development of automated test procedures and techniques for LSI circuits
Period *Obligations*
10/10/74-07/10/75 **FY75: \$6,861** **TOTAL: \$6,861**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Carroll, B. D. **MSFC/Gould, J. M.** **45-Elec Engr**
 MSFC/Juergensen, K.
(62-704 502-23-51)

NAS 8-31223 **Auburn University** **1024**
Optical data processing study
Period *Obligations*
02/04/75-02/04/76 **FY75: \$14,231** **TOTAL: \$14,231**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pinson, L. J. **MSFC/Keer, J. H.** **45-Elec Engr**
 MSFC/Smith, H. F.
(62-620 656-23-01)

NCA 8-106 **Auburn University** **1025**
Study of solid propellant rocket motor internal ballistic performance variation
Period *Obligations*
01/22/75-07/22/75 **FY75: \$21,590** **TOTAL: \$21,590**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sforzini, R. H. **MSFC/Shackelford, B. W.** **12-Chemistry**
(62-920 984-15-00)

**NASA'S UNIVERSITY PROGRAM
ALABAMA (Continued)**

NCA 8-108 Auburn University 1026
An analysis of solid rocket motor thrust imbalance
Period Obligations
01/22/75-07/22/75 FY75: \$1,259 TOTAL: \$1,259
Prin. Invest. NASA Tech. Officer CASE Category
Sforzini, R. H. MSFC/Shackelford, B. W. 43-Chem Engr
(62-920 984-15-00)

NCA 8-109 Auburn University 1027
Application of aerospace technology to the mathematical and statistical characterization of railbed and highway geometrics
Period Obligations
06/20/75-12/20/75 FY75: \$25,000 TOTAL: \$25,000
Prin. Invest. NASA Tech. Officer CASE Category
Bell, L. MSFC/Cook, L. J. 21-Mathematics
(62-601 644-02-02)

NGT 01-003-044 Auburn University 1028
Summer fellowship programs in engineering systems design
Period Obligations
12/16/69-03/31/76 FY75: \$141,200 TOTAL: \$719,236
Prin. Invest. NASA Tech. Officer CASE Category
Vachon, R. I. HQ-P/Carter, C. H. 49-Engr, NEC
(10-371 340-00-00)

NGT 01-003-045 Auburn University 1029
Summer faculty fellowship program in aeronautics and space research
Period Obligations
12/16/69-03/31/75 FY75: TOTAL: \$341,562
Prin. Invest. NASA Tech. Officer CASE Category
O'Brien, J. F. HQ-P/Carter, C. H. 49-Engr, NEC
(10-371 340-00-00) (10-370 181-00-00)

NSG 1002 Auburn University 1030
Analysis and compilation of missile aerodynamic data
Period Obligations
01/01/74-09/16/75 FY75: \$9,449 TOTAL: \$19,482
Prin. Invest. NASA Tech. Officer CASE Category
Greaux, A. E. LARC/Spearman, M. L. 41-Aero Engr
Burkhalter, J. E. LARC/Sawyer, W. C.
(23-702 505-11-22)

NSG 8017 Oakwood College 1031
Inhibitory effects of tocopherol (vitamin E) on free radical deterioration of cellular membranes
Period Obligations
09/20/74-10/30/75 FY75: \$18,840 TOTAL: \$18,840
Prin. Invest. NASA Tech. Officer CASE Category
Richardson, D. MSFC/Kent, M. I. 12-Chemistry
(62-371 340-00-00)

NGR 01-007-009 Talladega College 1032
Far infrared lattice properties of gallium arsenide
Period Obligations
01/01/74-01/01/76 FY75: \$25,650 TOTAL: \$57,659
Prin. Invest. NASA Tech. Officer CASE Category
Breecher, J. MSFC/Dalins, I. 13-Physics
MSFC/Kent, M. I.
(62-371 340-00-00)

NGR 01-007-010 Talladega College 1033
Thermal and solvent stable polymers study
Period Obligations
09/01/73-08/31/75 FY75: \$22,171 TOTAL: \$43,411
Prin. Invest. NASA Tech. Officer CASE Category
Kray, W. D. ARC/Rosser, R. W. 12-Chemistry
ARC/Parker, J. A.
(21-371 340-00-00)

NSG 8010 Talladega College 1034
Strains in clean metallic thin films produced by gaseous environment
Period Obligations
05/23/74-05/23/75 FY75: TOTAL: \$25,056
Prin. Invest. NASA Tech. Officer CASE Category
Morrison, R. A. MSFC/McKannan, E. C. 47-Materials Engr
(62-371 340-00-00)

NAS 9-13844 Tuskegee Institute 1035
Analytical investigation of the heat-pipe radiator as a spacecraft heat rejection system
Period Obligations
01/01/74-08/31/75 FY75: \$23,000 TOTAL: \$35,000
Prin. Invest. NASA Tech. Officer CASE Category
Sellers, J. P. JSC/French, B. O. 46-Mech Engr
(72-980 909-44-02)

NGR 01-005-010 Tuskegee Institute 1036
A study of the co-axial-submerged free jet
Period Obligations
04/07/71-10/30/74 FY75: TOTAL: \$69,537
Prin. Invest. NASA Tech. Officer CASE Category
Lenzo, C. S. MSFC/Guest, S. H. 41-Aero Engr
MSFC/Kent, M. I.
(62-371 340-00-00) (10-371 340-00-00)

NGT 01-005-750 Tuskegee Institute 1037
Training of predoctoral graduate students in space-related sciences and engineering
Period Obligations
06/01/75-07/31/76 FY75: \$14,000 TOTAL: \$14,000
Prin. Invest. NASA Tech. Officer CASE Category
Dybczak, Z. W. HQ-P/Pohly, J. G. 49-Engr, NEC
(10-030 010-00-00)

NSG 8003 Tuskegee Institute 1038
Investigation of effects of corona and electrical discharges on degradation of insulation materials
Period Obligations
02/01/74-02/01/76 FY75: \$29,995 TOTAL: \$53,886
Prin. Invest. NASA Tech. Officer CASE Category
Doreswamy, C. V. MSFC/Crowell, C. S. 45-Elec Engr
MSFC/Kent, M. I.
(62-371 340-00-00)

NGR 01-010-001 University of Alabama - Birmingham 1039
Model for origin and coevolution of genetic code and the process of protein synthesis
Period Obligations
05/09/73-05/31/76 FY75: \$27,283 TOTAL: \$72,550
Prin. Invest. NASA Tech. Officer CASE Category
Lacey, J. C., Jr. HQ-SL/Young, R. S. 12-Chemistry
(10-840 192-55-61)

NASA'S UNIVERSITY PROGRAM
ALABAMA (Continued)

NAS 8-24908 University of Alabama - Huntsville **1040**
Study of radiation environment in orbit of the Apollo applications satellites

<i>Period</i>	<i>Obligations</i>	
06/24/69-10/31/75	FY75:	TOTAL: \$195,278
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hiser, H. W.	MSFC/Parnell, T. A.	11-Astronomy
(62-960 964-50-00)	(62-910 933-50-00)	

NAS 8-24953 University of Alabama - Huntsville **1041**
Study of specific light output of CSI crystals

<i>Period</i>	<i>Obligations</i>	
06/26/69-02/29/76	FY75: \$69,997	TOTAL: \$349,852
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gregory, J. C.	MSFC/Parnell, T. A.	13-Physics
	MSFC/Fishman, G. J.	
(62-960 996-00-00)	(62-850 188-48-51)	(62-920 983-15-00)

NAS 8-26055 University of Alabama - Huntsville **1042**
Program history of project Saturn

<i>Period</i>	<i>Obligations</i>	
04/22/70-01/02/74	FY75:	TOTAL: \$146,996
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Beltz, J. S.	MSFC/Sorensen, V. C.	73-History
	MSFC/Akens, D. S.	
(62-910 933-50-00)		

NAS 8-27809 University of Alabama - Huntsville **1043**
Superconducting compounds & alloys

<i>Period</i>	<i>Obligations</i>	
06/29/71-10/31/75	FY75: \$34,910	TOTAL: \$127,191
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Otto, G. H.	MSFC/Lacy, L. L.	47-Materials Engr
	MSFC/Urban, E. W.	
(62-630 179-11-14)	(62-960 996-00-00)	

NAS 8-28097 University of Alabama - Huntsville **1044**
Triggering mechanisms for solar flares

<i>Period</i>	<i>Obligations</i>	
12/06/71-08/15/75	FY75: \$45,000	TOTAL: \$125,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wu, S. T.	MSFC/Hagyard, M. J.	13-Physics
	MSFC/Jones, B. P.	
(62-950 951-16-00)	(62-950 951-00-00)	

NAS 8-28248 University of Alabama - Huntsville **1045**
Environmental dynamics at orbital altitudes

<i>Period</i>	<i>Obligations</i>	
01/24/72-12/31/75	FY75:	TOTAL: \$104,332
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hermann, R.	MSFC/Swenson, G. R.	42-Astro Engr
(62-980 909-55-47)		

NAS 8-28304 University of Alabama - Huntsville **1046**
Skylab experiment on growth of spherical crystals

<i>Period</i>	<i>Obligations</i>	
09/19/72-06/30/75	FY75: \$40,000	TOTAL: \$92,547
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Walter, H. U.	MSFC/Adams, W. R.	19-Phys Sci, NEC
	MSFC/Bannister, T. C.	
(62-960 948-90-95)	(62-960 948-00-00)	

NAS 8-28736 University of Alabama - Huntsville **1047**
Experimental investigations of relationships between the pressure drop and pertinent flow system parameters of capillary screen channels

<i>Period</i>	<i>Obligations</i>	
05/17/72-07/17/74	FY75:	TOTAL: \$35,194
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Shih, C. C.	MSFC/Allums, S. L.	46-Mech Engr
(62-950 951-15-00)	(62-950 951-00-00)	(62-910 933-40-00)

NAS 8-29316 University of Alabama - Huntsville **1048**
Working model of the London moment readout system

<i>Period</i>	<i>Obligations</i>	
10/06/72-11/30/75	FY75: \$75,000	TOTAL: \$239,241
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hendricks, J. B.	MSFC/Decher, R.	99-Multi-Discip
Karr, G. R.	MSFC/Urban, E. W.	
(62-850 188-41-54)	(62-850 188-78-51)	

NAS 8-29542 University of Alabama - Huntsville **1049**
Electrical characterization of single crystals

<i>Period</i>	<i>Obligations</i>	
01/02/72-02/28/75	FY75:	TOTAL: \$83,482
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Castle, J. G., Jr.	MSFC/Davidson, M. C.	47-Materials Engr
(62-960 948-90-95)	(62-980 975-00-00)	

NAS 8-29543 University of Alabama - Huntsville **1050**
Airglow research

<i>Period</i>	<i>Obligations</i>	
02/01/73-05/31/75	FY75: \$2,000	TOTAL: \$31,990
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wu, S. T.	MSFC/Swenson, G. R.	13-Physics
(62-850 385-38-00)	(62-850 188-36-56)	(62-850 188-00-00)

NAS 8-29650 University of Alabama - Huntsville **1051**
Evaluation & comparison of semiconductor specimens by X-ray techniques

<i>Period</i>	<i>Obligations</i>	
03/20/73-12/31/74	FY75:	TOTAL: \$41,999
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Walter, H. U.	MSFC/Zwiener, J. M.	13-Physics
(62-980 975-90-95)		

NAS 8-30216 University of Alabama - Huntsville **1052**
Study of define points of entry for potential contaminants in limestone aquifers

<i>Period</i>	<i>Obligations</i>	
06/22/73-10/31/74	FY75:	TOTAL: \$15,400
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Doyle, F. L.	MSFC/Paludan, C. T.	39-Env Sci, NEC
(62-680 176-53-71)	(62-680 160-75-98)	

NAS 8-30244 University of Alabama - Huntsville **1053**
Study of effect of shock wave compaction on A-15 superconductors

<i>Period</i>	<i>Obligations</i>	
06/27/73-08/15/74	FY75:	TOTAL: \$23,720
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Otto, G. H.	MSFC/Urban, E. W.	13-Physics
(62-950 953-00-00)		

**NASA'S UNIVERSITY PROGRAM
ALABAMA (Continued)**

NAS 8-30247 University of Alabama - Huntsville **1054**
Review, study, and evaluation of possible flight experiments relating to cloud physics experiments in space

<i>Period</i>	<i>Obligations</i>	
11/01/73-10/31/75	FY75: \$70,000	TOTAL: \$100,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hung, R. J.	MSFC/Smith, R. E.	31-Atmos Sci
	MSFC/Vaughan, W. W.	

(62-960 996-00-00)

NAS 8-30286 University of Alabama - Huntsville **1055**
Design, fabrication, & installation of safety shield for X-ray apparatus

<i>Period</i>	<i>Obligations</i>	
07/11/73-09/11/73	FY75: \$4,000	TOTAL: \$4,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Walters, H. U.	MSFC/Fields, S. A.	49-Engr, NEC
	MSFC/Davidson, M. C.	

(62-980 975-00-00)

NAS 8-30563 University of Alabama - Huntsville **1056**
Study of magnetospheric and laboratory plasma physics experiments

<i>Period</i>	<i>Obligations</i>	
09/01/74-11/30/75	FY75: \$48,796	TOTAL: \$48,796
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sung, C. C.	MSFC/Chappell, C. R.	13-Physics
	MSFC/Roberts, W. T.	

(62-850 356-36-04) (62-850 385-36-00) (62-850 356-36-01)

NAS 8-30616 University of Alabama - Huntsville **1057**
Tidal and gravity wave propagation

<i>Period</i>	<i>Obligations</i>	
02/14/74-07/31/75	FY75: \$25,000	TOTAL: \$35,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hung, R. J.	MSFC/Smith, R. E.	31-Atmos Sci
Rao, G. L.	MSFC/Swenson, G. R.	

(62-920 989-13-00) (62-680 175-61-73)

NAS 8-30737 University of Alabama - Huntsville **1058**
Educational uses and users for the space transportation system

<i>Period</i>	<i>Obligations</i>	
03/01/74-02/28/75	FY75: \$24,967	TOTAL: \$24,967
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Engle, H. A.	MSFC/Brown, R. L.	99-Multi-Discip
Christensen, D. L.		

(62-980 975-50-01)

NAS 8-30772 University of Alabama - Huntsville **1059**
Study on the environmental parameters of the Tennessee River

<i>Period</i>	<i>Obligations</i>	
05/16/74-08/31/75	FY75: \$9,999	TOTAL: \$24,761
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rossing, L. M.	MSFC/Morton, R. R.	51-Biology
	MSFC/Hamby, H. G.	

(62-680 176-53-71)

NAS 8-30774 University of Alabama - Huntsville **1060**
Study on space processing of crystalline materials

<i>Period</i>	<i>Obligations</i>	
09/01/74-05/31/75	FY75: \$9,862	TOTAL: \$9,862
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Castle, J. G., Jr.	MSFC/Zwiener, J. M.	47-Materials Engr

(62-630 179-12-13)

NAS 8-30885 University of Alabama - Huntsville **1061**
Demonstrate the feasibility of the mirads for the retrieval of air pollution data

<i>Period</i>	<i>Obligations</i>	
06/26/74-06/29/75	FY75: \$14,997	TOTAL: \$14,997
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Schroer, B. J.	MSFC/Gravette, M. C.	39-Env Sci, NEC
	MSFC/Gibbons, J. D.	

(62-680 176-81-71)

NAS 8-31169 University of Alabama - Huntsville **1062**
Earth resources data acquisition sensor study

<i>Period</i>	<i>Obligations</i>	
12/01/74-08/06/75	FY75: \$10,000	TOTAL: \$10,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Grohse, E. W.	MSFC/Morton, R. R.	44-Civil Engr
	MSFC/Hamby, H. G.	

(62-680 177-54-71)

NAS 8-31170 University of Alabama - Huntsville **1063**
Study of efficient low power diffractometer designs

<i>Period</i>	<i>Obligations</i>	
01/15/75-12/31/75	FY75: \$19,992	TOTAL: \$19,992
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gregory, J. C.	MSFC/Parnell, T. A.	13-Physics
	MSFC/Eby, P. B.	

(62-840 185-50-40)

NAS 8-31171 University of Alabama - Huntsville **1064**
Study of internal wave motions on the neutral atmosphere

<i>Period</i>	<i>Obligations</i>	
02/14/75-08/14/76	FY75: \$20,000	TOTAL: \$20,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hung, R. J.	MSFC/West, G. S., Jr.	39-Env Sci, NEC

(62-920 989-13-00)

NAS 8-31174 University of Alabama - Huntsville **1065**
Contract for integrated real time contamination monitor

<i>Period</i>	<i>Obligations</i>	
03/11/75-03/10/76	FY75: \$13,000	TOTAL: \$13,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Luttges, W. E.	MSFC/Decko, G. J.	19-Phys Sci, NEC
	MSFC/Loughead, A. G.	

(62-980 909-54-13)

NAS 8-31194 University of Alabama - Huntsville **1066**
Earth and ocean modeling

<i>Period</i>	<i>Obligations</i>	
12/01/74-01/16/77	FY75: \$90,919	TOTAL: \$90,919
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Knezovich, F. M.	MSFC/Teuber, D. L.	13-Physics
	MSFC/Lundquist, C. A.	

(62-630 639-10-00)

NAS 8-31293 University of Alabama - Huntsville **1067**
Solar heating and cooling technical data and systems analysis

<i>Period</i>	<i>Obligations</i>	
11/07/74-07/31/75	FY75: \$39,998	TOTAL: \$39,998
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Christensen, D. L.	MSFC/Bowden, D. R.	13-Physics

(62-400 647-40-01)

NASA'S UNIVERSITY PROGRAM

ALABAMA (Continued)

NAS 8-31321 University of Alabama - Huntsville 1068
 Cloud physics laboratory project science and applications working group
Period *Obligations*
 12/20/74-07/31/76 FY75: \$80,000 TOTAL: \$80,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Hung, R. J. MSFC/Smith, R. E. 31-Atmos Sci
 MSFC/Hill, C. K.
 (62-601 645-10-01)

NAS 8-31345 University of Alabama - Huntsville 1069
 Water resources and stream contamination study
Period *Obligations*
 04/01/75-02/01/76 FY75: \$15,000 TOTAL: \$15,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Doyle, F. L. MSFC/Bensko, J., Jr. 32-Geological Sci
 MSFC/Hamby, H. G.
 (62-680 176-53-71)

NGL 01-008-001 University of Alabama - Huntsville 1070
 Research in aerospace physical sciences and engineering
Period *Obligations*
 09/17/69-02/28/76 FY75: TOTAL: \$500,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Rush, J. E. HQ-P/Redding, E. R. 99-Multi-Discip
 MSFC/Kent, M. I.
 (10-371 340-00-00) (10-370 183-00-00)

NGR 01-008-015 University of Alabama - Huntsville 1071
 Effects of solar flare ionization on terrestrial ionosphere
Period *Obligations*
 11/30/73-09/30/75 FY75: TOTAL: \$15,189
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Rao, G. L. HQ-SG/Jordan, S. D. 11-Astronomy
 (10-850 385-38-00)

NSG 2058 University of Alabama - Huntsville 1072
 Development of an isolation research model and paradigm
Period *Obligations*
 12/15/74-12/15/75 FY75: \$50,201 TOTAL: \$50,201
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Rogers, J. G. ARC/Kubokawa, C. C. 69-Psych, NEC
 Sullins, W. R., Jr.
 (21-970 970-23-10)

NAS 8-25562 University of Alabama - Tuscaloosa 1073
 The study of the effects of atmospheric turbulence on laser communication system
Period *Obligations*
 03/03/70-12/31/74 FY75: \$5,777 TOTAL: \$95,601
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Webb, W. E. MSFC/Randall, J. L. 31-Atmos Sci
 (62-980 975-75-00) (62-750 125-00-00)

NAS 8-28019 University of Alabama - Tuscaloosa 1074
 Active control of primary mirror of an orbiting telescope with thermal excitation
Period *Obligations*
 10/18/71-12/31/73 FY75: TOTAL: \$35,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Hill, J. L. MSFC/Clarke, W. D. 49-Engr, NEC
 MSFC/Randall, J. L.
 (62-750 115-00-00)

NAS 8-28098 University of Alabama - Tuscaloosa 1075
 Crystal growth
Period *Obligations*
 12/02/71-08/12/75 FY75: \$19,977 TOTAL: \$99,803
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Miyagawa, I. MSFC/Bannister, T. C. 13-Physics
 MSFC/Facemire, B. R.
 (62-960 996-00-00) (62-980 975-90-95)

NAS 8-29100 University of Alabama - Tuscaloosa 1076
 Water resources planning for rivers draining into mobile bay
Period *Obligations*
 07/01/73-12/31/75 FY75: \$24,980 TOTAL: \$49,980
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 April, G. C. MSFC/Morton, R. R. 49-Engr, NEC
 MSFC/Paludan, C. T.
 (62-680 177-54-71)

NAS 8-29494 University of Alabama - Tuscaloosa 1077
 Study-experiment analysis and ground base test programs for a single crystal growth project
Period *Obligations*
 01/29/73-09/30/74 FY75: TOTAL: \$19,497
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 De Smet, D. J. MSFC/Schafer, C. F. 13-Physics
 MSFC/Davidson, M. C.
 (62-960 948-90-95)

NAS 8-29936 University of Alabama - Tuscaloosa 1078
 Assessment of practicality of remote sensing techniques for study of effects of strip mining in Alabama
Period *Obligations*
 06/08/73-06/30/75 FY75: TOTAL: \$32,651
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Hughes, T. H. MSFC/Bensko, J., Jr. 32-Geological Sci
 MSFC/Jones, R.
 (62-680 177-53-71)

NAS 8-29937 University of Alabama - Tuscaloosa 1079
 Use of remote sensing techniques for geological hazard surveys in vegetated urban regions
Period *Obligations*
 06/08/73-06/30/76 FY75: \$20,000 TOTAL: \$49,996
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Stow, S. H. MSFC/Bensko, J., Jr. 32-Geological Sci
 (62-680 177-53-71)

NAS 8-30479 University of Alabama - Tuscaloosa 1080
 Evaluation of composite mobile holographic nondestructive test system
Period *Obligations*
 12/28/73-05/27/76 FY75: \$15,000 TOTAL: \$31,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Liu, H. K. MSFC/Moore, W. W., Jr. 13-Physics
 MSFC/Kurtz, R. L.
 (62-950 951-00-00) (62-704 502-21-28)

NASA'S UNIVERSITY PROGRAM
ALABAMA (Continued)

NAS 8-30624 University of Alabama - Tuscaloosa **1081**
 Plume induced flow separation in unsteady aerodynamics
Period *Obligations*
 05/13/74-05/12/76 FY75: \$25,000 TOTAL: \$50,000
Prin. Invest. NASA Tech. Officer CASE Category
 Doughty, J. O. MSFC/Schutzenhofer, L. A. 46-Mech Engr
 MSFC/Wilhold, G. A.
 (62-920 989-13-00) (62-920 986-25-00)

NAS 8-30886 University of Alabama - Tuscaloosa **1082**
 Computer model simulation of the effects of electromagnetic interference
Period *Obligations*
 07/15/74-09/01/74 FY75: \$4,182 TOTAL: \$4,182
Prin. Invest. NASA Tech. Officer CASE Category
 Ainsworth, O. R. MSFC/Digesu, F. E. 21-Mathematics
 (62-980 975-50-01)

NAS 8-31343 University of Alabama - Tuscaloosa **1083**
 Reduction and analysis of data from an integrating TV system
Period *Obligations*
 02/01/75-01/31/76 FY75: \$8,000 TOTAL: \$8,000
Prin. Invest. NASA Tech. Officer CASE Category
 Fay, T. D. MSFC/Miller, E. R. 11-Astronomy
 MSFC/Duncan, B. J.
 (62-850 188-41-51)

NGT 01-002-080 University of Alabama - Tuscaloosa **1084**
 Summer faculty fellowship program
Period *Obligations*
 01/14/71-03/31/76 FY75: \$101,474 TOTAL: \$313,359
Prin. Invest. NASA Tech. Officer CASE Category
 Barfield, B. F. HQ-P/Carter, C. H. 49-Engr, NEC
 (10-371 340-00-00) (62-960 972-50-00)

NSG 3003 University of South Alabama **1085**
 Laser/Doppler spectrometer method of particle sizing
Period *Obligations*
 06/15/74-12/15/75 FY75: TOTAL: \$9,744
Prin. Invest. NASA Tech. Officer CASE Category
 Weber, F. N., Jr. LERC/Fordyce, J. S. 13-Physics
 (22-702 770-18-01)

ALASKA

NAS 5-20803 University of Alaska - Fairbanks **1086**
 ERTS follow-on investigation
Period *Obligations*
 01/21/75-11/21/76 FY75: \$50,397 TOTAL: \$50,397
Prin. Invest. NASA Tech. Officer CASE Category
 Gedney, L. GSFC/Broderick, J. 32-Geological Sci
 (51-680 641-15-00)

NAS 5-20915 University of Alaska - Fairbanks **1087**
 Analysis of data for ERTS follow-on investigation
Period *Obligations*
 02/04/75-02/04/77 FY75: \$66,325 TOTAL: \$66,325
Prin. Invest. NASA Tech. Officer CASE Category
 Lent, P. GSFC/Oseroff, H. 39-Env Sci, NEC
 (51-680 641-15-00)

NAS 5-20959 University of Alaska - Fairbanks **1088**
 Analysis of ERTS data follow-on investigation
Period *Obligations*
 02/24/75-11/24/76 FY75: \$28,337 TOTAL: \$28,337
Prin. Invest. NASA Tech. Officer CASE Category
 Stringer, W. GSFC/Crump, E. W. 33-Oceanography
 (51-680 641-15-00)

NAS 5-21833 University of Alaska - Fairbanks **1089**
 ERTS data user investigations
Period *Obligations*
 09/13/72-07/30/75 FY75: TOTAL: \$469,321
Prin. Invest. NASA Tech. Officer CASE Category
 Belon, A. E. GSFC/Crump, E. W. 31-Atmos Sci
 (51-680 641-14-01) (51-680 641-14-02) (51-680 641-14-03)

NAS 9-13945 University of Alaska - Fairbanks **1090**
 Apollo-Soyuz test project experiment MA-017-barium cloud
Period *Obligations*
 01/21/74-07/31/76 FY75: \$88,000 TOTAL: \$117,509
Prin. Invest. NASA Tech. Officer CASE Category
 Wescott, E. M. JSC/Baldwin, R. R. 32-Geological Sci
 Davis, R. N.
 (72-930 966-30-00) (72-930 966-00-00)

NAS 9-14645 University of Alaska - Fairbanks **1091**
 Optical instrument definition study for AMPS payloads
Period *Obligations*
 04/07/75-06/30/75 FY75: \$20,000 TOTAL: \$20,000
Prin. Invest. NASA Tech. Officer CASE Category
 Davis, T. N. JSC/Baker, B. R. 11-Astronomy
 (72-850 356-36-03)

NGL 02-001-092 University of Alaska - Fairbanks **1092**
 Application of remote sensing data to surveys of the Alaskan environment
Period *Obligations*
 07/26/72-06/30/77 FY75: \$100,000 TOTAL: \$375,000
Prin. Invest. NASA Tech. Officer CASE Category
 Miller, J. M. HQ-P/Vitale, J. A. 39-Env Sci, NEC
 Belon, A. E.
 (10-371 340-00-00)

NGR 02-001-087 University of Alaska - Fairbanks **1093**
 Measurement of electric fields in a rayed auroral arc
Period *Obligations*
 03/02/72-01/31/76 FY75: \$250,000 TOTAL: \$425,417
Prin. Invest. NASA Tech. Officer CASE Category
 Davis, T. N. HQ-SG/Berko, F. W. 13-Physics
 HQ-SG/Ott, E. J.
 (10-850 879-11-00)

NGR 02-001-099 University of Alaska - Fairbanks **1094**
 Research effort by airborne sciences
Period *Obligations*
 11/28/72-01/01/76 FY75: \$15,000 TOTAL: \$90,467
Prin. Invest. NASA Tech. Officer CASE Category
 Sivjee, C. G. ARC/Haughney, L. C. 31-Atmos Sci
 (21-850 352-02-02) (21-850 352-02-01)

**NASA'S UNIVERSITY PROGRAM
ARIZONA (Continued)**

NAS 5-21812 University of Arizona 1108
Study to explore the use of orbital remote sensing
Period *Obligations*
08/17/72-04/01/75 FY75: TOTAL: \$49,975
Prin. Invest. NASA Tech. Officer CASE Category
McGinnies, W. G. GSFC/Freden, S. C. 59-Life Sci, NEC
Haase, E. F.
(51-680 641-14-07) (51-680 641-00-00)

NAS 5-21820 University of Arizona 1109
Investigation of use of earth resources technological satellite
Period *Obligations*
08/17/72-12/01/74 FY75: TOTAL: \$19,999
Prin. Invest. NASA Tech. Officer CASE Category
Smith, E. L., Jr. GSFC/Stonesifer, G. R. 39-Env Sci, NEC
Fish, E. B.
(51-680 641-14-01)

NAS 5-22263 University of Arizona 1110
Maintenance and operation of the 60 inch NASA telescope at Mt Lemmon
Period *Obligations*
10/01/73-09/30/74 FY75: TOTAL: \$55,227
Prin. Invest. NASA Tech. Officer CASE Category
Kuiper, G. P. GSFC/Steher, T. P. 11-Astronomy
Lee, T. E. GSFC/Hamilton, T. W.
Wisniewski, W.
(51-950 951-16-00) (51-850 188-41-51)

NAS 5-23176 University of Arizona 1111
Phase C/D for HECRE-HEAO-A
Period *Obligations*
12/01/72-07/01/76 FY75: TOTAL: \$30,000
Prin. Invest. NASA Tech. Officer CASE Category
Bowen, T. GSFC/Browning, R. K. 11-Astronomy
Delise, D. A.
(51-850 832-00-00)

NAS 8-27804 University of Arizona 1112
Stray light suppression study
Period *Obligations*
11/20/71-03/30/75 FY75: \$35,000 TOTAL: \$229,950
Prin. Invest. NASA Tech. Officer CASE Category
Tift, W. G. MSFC/Griner, D. B. 13-Physics
MSFC/Zurasky, J. L.
(62-850 893-78-57) (62-850 188-78-57)

NAS 8-27863 University of Arizona 1113
Study on an instrument for sensing errors in a telescope's wavefront
Period *Obligations*
01/21/72-06/23/74 FY75: TOTAL: \$123,645
Prin. Invest. NASA Tech. Officer CASE Category
Shack, R. V. MSFC/Wyman, C. L. 13-Physics
(62-980 975-00-00)

NAS 8-28661 University of Arizona 1114
Measurement of dimensional stability
Period *Obligations*
06/06/72-06/05/75 FY75: \$24,200 TOTAL: \$93,456
Prin. Invest. NASA Tech. Officer CASE Category
Jacobs, S. F. MSFC/Kurtz, R. L. 13-Physics
MSFC/Moore, W. W., Jr.
(62-850 188-78-57) (62-980 975-84-00)

NAS 8-29566 University of Arizona 1115
Role of gravity in preparative electrophoresis
Period *Obligations*
02/01/73-11/19/75 FY75: \$74,967 TOTAL: \$224,887
Prin. Invest. NASA Tech. Officer CASE Category
Bier, M. MSFC/Allen, R. E. 13-Physics
MSFC/Snyder, R. S.
(62-630 179-13-11) (62-960 996-00-00)

NAS 8-31188 University of Arizona 1116
Maintenance and operation of the 60 inch NASA telescope at Mt Lemmon
Period *Obligations*
10/31/74-03/31/75 FY75: \$16,034 TOTAL: \$16,034
Prin. Invest. NASA Tech. Officer CASE Category
Sonett, C. P. MSFC/Lundquist, C. A. 11-Astronomy
MSFC/Miller, E. R.
(62-950 951-00-00)

NAS 8-31192 University of Arizona 1117
Maintenance and operation of the 60 inch NASA telescope at Mt Lemmon
Period *Obligations*
10/01/74-01/24/76 FY75: \$56,045 TOTAL: \$56,045
Prin. Invest. NASA Tech. Officer CASE Category
Sonett, C. P. MSFC/Lundquist, C. A. 11-Astronomy
MSFC/Miller, E. R.
(62-850 352-02-03) (62-950 951-00-00)

NAS 8-31196 University of Arizona 1118
Replacement of optics for the NASA 1.5 meter telescope
Period *Obligations*
10/18/74-10/10/76 FY75: \$46,700 TOTAL: \$46,700
Prin. Invest. NASA Tech. Officer CASE Category
Sonett, C. P. MSFC/Miller, E. R. 11-Astronomy
MSFC/Lundquist, C. A.
(62-850 352-02-03) (62-950 951-00-00)

NAS 8-31537 University of Arizona 1119
Engineering evaluation of rocket electrophoresis
Period *Obligations*
06/17/75-12/17/75 FY75: \$30,000 TOTAL: \$30,000
Prin. Invest. NASA Tech. Officer CASE Category
Bier, M. MSFC/Allen, R. E. 47-Materials Engr
MSFC/Harwell, R. J.
(62-630 179-42-20)

NAS 9-14692 University of Arizona 1120
Automated computerized pattern recognition in cytology
Period *Obligations*
06/01/75-05/30/76 FY75: \$20,000 TOTAL: \$20,000
Prin. Invest. NASA Tech. Officer CASE Category
Bartels, P. H. JSC/Kimsey, S. L. 59-Life Sci, NEC
(72-970 970-51-15)

NASW 2283 University of Arizona 1121
Optical studies on large space telescope
Period *Obligations*
08/16/71-08/16/74 FY75: TOTAL: \$57,050
Prin. Invest. NASA Tech. Officer CASE Category
Meinel, A. B. HQ-SG/Aucremanne, M. J. 42-Astro Engr
HQ-SG/Chase, R. H.
(10-850 188-00-00)

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NAS10-8518	University of Arizona	1122			
Thunderstorm electrical field changes and associated meteorological conditions at KSC					
<i>Period</i>		<i>Obligations</i>			
02/12/74-04/14/76	FY75: \$31,000	TOTAL: \$48,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Krider, E. P.	KSC/Toft, P. D.	31-Atmos Sci			
Jacobson, E. A.					
(76-980 909-64-09)	(76-950 953-00-00)				
NCA 2-40501	University of Arizona	1123			
Simulation of the colian modification of Martian craters					
<i>Period</i>		<i>Obligations</i>			
07/29/74-06/01/75	FY75: \$5,000	TOTAL: \$5,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Hubbard, W. B., Jr.	ARC/Zill, L. P.	11-Astronomy			
(21-840 185-47-67)					
NCA 2-40502	University of Arizona	1124			
Optimization of solar cells for high intensity illumination					
<i>Period</i>		<i>Obligations</i>			
03/01/75-02/28/76	FY75: \$14,615	TOTAL: \$14,615			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Call, R. L.	ARC/Zill, L. P.	45-Elec Engr			
(21-704 506-25-32)					
NCA 2-40503	University of Arizona	1125			
Real-time analysis of wide-band data					
<i>Period</i>		<i>Obligations</i>			
05/15/75-01/15/76	FY75: \$15,000	TOTAL: \$15,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Williams, P. L.	ARC/Zill, L. P.	45-Elec Engr			
(21-790 159-00-00)					
NCA 2-40504	University of Arizona	1126			
Investigation of the optimization of parameters					
<i>Period</i>		<i>Obligations</i>			
06/15/75-07/15/75	FY75: \$3,112	TOTAL: \$3,112			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Thompson, R. I.	ARC/Zill, L. P.	49-Engr, NEC			
(21-850 352-02-03)					
NCA 2-40601	University of Arizona	1127			
Radiative transfer, hydrodynamics, and ionization mass loss					
<i>Period</i>		<i>Obligations</i>			
07/01/75-08/15/75	FY75: \$3,500	TOTAL: \$3,500			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Caroff, L. J.	ARC/Zill, L. P.	13-Physics			
(21-840 185-47-67)					
NCA 2-40602	University of Arizona	1128			
Giant planet models					
<i>Period</i>		<i>Obligations</i>			
07/01/75-06/01/76	FY75: \$5,040	TOTAL: \$5,040			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Hubbard, W. B., Jr.	ARC/Zill, L. P.	11-Astronomy			
(21-840 196-41-67)					
NCA 5-38	University of Arizona	1129			
Propellant rocket motors					
<i>Period</i>		<i>Obligations</i>			
11/26/74-04/30/75	FY75: \$7,000	TOTAL: \$7,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Burke, J. J.	GSFC/Maran, S. O.	19-Phys Sci, NEC			
(51-850 188-38-53)					
NCA 5-39	University of Arizona	1130			
Research task under GSFC/Univ of Arizona master agreement work statement no 8					
<i>Period</i>		<i>Obligations</i>			
11/25/74-08/01/75	FY75: \$3,000	TOTAL: \$3,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Epps, H. W.	GSFC/Maran, S. O.	19-Phys Sci, NEC			
(51-850 188-38-53)					
NCA 5-47	University of Arizona	1131			
Infrared absorption studies of ices					
<i>Period</i>		<i>Obligations</i>			
05/07/75-12/31/75	FY75: \$10,400	TOTAL: \$10,400			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Fink, U. W.	GSFC/Pearl, J. C.	11-Astronomy			
(51-840 196-41-50)					
NGL 03-002-002	University of Arizona	1132			
Planetary, spectroscopic; selenodetic & physical studies of lunar surface					
<i>Period</i>		<i>Obligations</i>			
08/12/61-05/31/77	FY75:	TOTAL: \$2,419,460			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Sonett, C. P.	HQ-SL/Brunk, W. E.	11-Astronomy			
(10-840 196-41-80)	(10-840 185-00-00)				
NGL 03-002-006	University of Arizona	1133			
Application of modern automatic control theory to nuclear rocket dynamics & control					
<i>Period</i>		<i>Obligations</i>			
06/28/63-06/01/74	FY75:	TOTAL: \$437,819			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Schultz, D. G.	HQ-NS/Schwenk, F. C.	45-Elec Engr			
(10-704 503-04-01)	(45-720 122-00-00)				
NGL 03-002-017	University of Arizona	1134			
Operation of MV Van de Graaff accelerator for basic experiments in atomic optical spectroscopy					
<i>Period</i>		<i>Obligations</i>			
05/21/64-10/31/77	FY75: \$45,000	TOTAL: \$1,005,061			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Bashkin, S.	HQ-SG/Roman, N. G.	11-Astronomy			
(10-850 188-41-51)	(10-850 188-00-00)				
NGL 03-002-019	University of Arizona	1135			
High resolution electron microscopic techniques to study biological material					
<i>Period</i>		<i>Obligations</i>			
06/07/63-08/31/77	FY75: \$30,000	TOTAL: \$411,055			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Hoenig, S. A.	HQ-SL/Fellows, R. F.	31-Atmos Sci			
(10-840 185-47-80)	HQ-SL/Brunk, W. E.				

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NGL 03-002-032	University of Arizona	1136			
Large optical telescope systems suitable for use with manned space systems					
<i>Period</i>		<i>Obligations</i>			
08/05/64-03/31/76	FY75:	TOTAL: \$746,232			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Tiftt, W. G.	HQ-SG/Roman, N. G.	11-Astronomy			
	HQ-SG/Bogges, N. W.				
(10-850 188-41-51)	(10-850 188-00-00)	(10-980 981-00-00)			
NGL 03-002-081	University of Arizona	1137			
Photometry and polarimetry of minor planets					
<i>Period</i>		<i>Obligations</i>			
03/14/66-06/30/77	FY75: \$40,000	TOTAL: \$329,272			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Gehrels, A. M.	HQ-SG/Dubin, M.	11-Astronomy			
	HQ-SL/Brunk, W. E.				
(10-850 188-45-51)	(10-850 188-00-00)				
NGL 03-002-122	University of Arizona	1138			
Astrometric and astrophysical investigation of comets, minor planets, and satellites					
<i>Period</i>		<i>Obligations</i>			
02/22/67-04/30/78	FY75:	TOTAL: \$188,015			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Roemer, E.	HQ-SL/Brunk, W. E.	11-Astronomy			
	HQ-SL/Fellows, R. F.				
(10-840 196-41-80)	(10-840 185-00-00)				
NGL 03-002-191	University of Arizona	1139			
Lunar surface and planetology study					
<i>Period</i>		<i>Obligations</i>			
05/16/69-05/31/77	FY75: \$45,120	TOTAL: \$434,575			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Strom	HQ-SM/Hanley, J. B.	32-Geological Sci			
Whitaker, E. A.	HQ-SM/Roberson, F. I.				
(10-810 383-20-02)	(10-810 383-09-50)	(10-810 195-00-00)			
NGL 03-002-313	University of Arizona	1140			
Remote sensing applications for state & local government					
<i>Period</i>		<i>Obligations</i>			
03/07/72-02/28/78	FY75: \$125,000	TOTAL: \$400,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Beckel, C. L.	HQ-P/Vitale, J. A.	39-Env Sci, NEC			
Fostier, K. E.					
(10-371 340-00-00)					
NGR 03-002-071	University of Arizona	1141			
Cosmic ray investigations of elementary particle phenomena at very high energies					
<i>Period</i>		<i>Obligations</i>			
01/12/66-10/31/75	FY75:	TOTAL: \$985,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Bowen, T.	HQ-SG/Opp, A. G.	11-Astronomy			
(10-850 188-46-56)	(10-850 188-46-52)	(10-850 188-00-00)			
NGR 03-002-107	University of Arizona	1142			
Basic research in astrophysics and space science					
<i>Period</i>		<i>Obligations</i>			
09/01/67-08/31/75	FY75: \$55,000	TOTAL: \$418,063			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Fan, C. Y.	HQ-SG/Berko, F. W.	13-Physics			
	HQ-SG/Schmerling, E. R.				
(10-850 188-36-55)	(10-850 188-00-00)				
NGR 03-002-171	University of Arizona	1143			
Analysis of carbonaceous meteorites					
<i>Period</i>		<i>Obligations</i>			
10/26/68-09/30/75	FY75: \$50,000	TOTAL: \$392,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Nagy, B.	HQ-SL/Young, R. S.	32-Geological Sci			
Urey, H. C.					
(10-840 192-55-62)					
NGR 03-002-180	University of Arizona	1144			
Multicolor photoelectric photometry and interferometric (Fourier transform) infrared spectroscopy					
<i>Period</i>		<i>Obligations</i>			
02/17/69-07/31/73	FY75:	TOTAL: \$62,669			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Lee, T. A.	GSFC/Hoffman, W. F.	11-Astronomy			
	GSFC/Stothers, R. B.				
(51-850 188-00-00)					
NGR 03-002-219	University of Arizona	1145			
Photopolarimetry of Mercury, Mars, and satellites					
<i>Period</i>		<i>Obligations</i>			
02/13/70-10/31/75	FY75: \$34,990	TOTAL: \$209,350			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Gehrels, A. M.	HQ-SL/Brunk, W. E.	11-Astronomy			
	HQ-SL/Fellows, R. F.				
(10-840 196-41-80)	(10-840 196-00-00)				
NGR 03-002-269	University of Arizona	1146			
Operation of a 30 cm flying infrared telescope					
<i>Period</i>		<i>Obligations</i>			
05/04/71-11/30/75	FY75: \$29,999	TOTAL: \$259,170			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Low, F. J.	HQ-SG/Roman, N. G.	11-Astronomy			
	HQ-SG/Bogges, N. W.				
(10-850 188-41-55)	(10-850 188-00-00)				
NGR 03-002-309	University of Arizona	1147			
Investigation of a photon-counting silicon intensifier target device					
<i>Period</i>		<i>Obligations</i>			
04/14/72-06/30/73	FY75:	TOTAL: \$74,884			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Weymann, R. J.	HQ-SG/Sobieski, S.	11-Astronomy			
	HQ-SG/Aucremanne, M. J.				
(10-850 188-00-00)					
NGR 03-002-332	University of Arizona	1148			
Infrared spectroscopy of the planets from 1-5.6 micron with the medium-resolution LPL Fourier interferometer					
<i>Period</i>		<i>Obligations</i>			
03/05/73-09/01/75	FY75: \$57,178	TOTAL: \$94,478			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Larson, H. P.	ARC/Cameron, R. M.	11-Astronomy			
Fink, U. W.	ARC/Gillespie, C. M., Jr.				
(21-850 352-02-03)	(21-850 352-00-00)				
NGR 03-002-356	University of Arizona	1149			
Infrared observations of the planets					
<i>Period</i>		<i>Obligations</i>			
03/09/73-02/28/74	FY75:	TOTAL: \$19,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Low, F. J.	HQ-SL/Brunk, W. E.	11-Astronomy			
	HQ-SL/Fellows, R. F.				
(10-840 196-41-80)					

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NGR 03-002-363 University of Arizona 1150
Diffraction limited camera on the large space telescope
Period *Obligations*
10/01/73-02/29/76 FY75: \$4,560 TOTAL: \$11,882
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Serkowski, K. M. GSFC/Sobieski, S. 11-Astronomy
GSFC/Meese, K. J.
(51-850 188-78-58)

NGR 03-002-370 University of Arizona 1151
An investigation of electromagnetic processes in the early solar system with bearing on thermal evolution and fossil magnetism
Period *Obligations*
10/01/73-09/30/75 FY75: \$45,750 TOTAL: \$95,750
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sonett, C. P. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Holt, H. E.
(10-840 185-50-81)

NGR 03-002-371 University of Arizona 1152
Far infrared observations of galactic and extra-galactic sources of radiation
Period *Obligations*
09/01/73-08/31/75 FY75: \$50,000 TOTAL: \$100,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hoffman, W. F. HQ-SG/Bogges, N. W. 11-Astronomy
Aannestad, P. A. HQ-SG/Roman, N. G.
Campbell, M. F.
(10-850 188-41-55)

NGR 03-002-372 University of Arizona 1153
Silicon intensifier target photon counting spectrograph research
Period *Obligations*
01/01/74-02/28/75 FY75: TOTAL: \$24,990
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gilbert, G. R. GSFC/Sobieski, S. 11-Astronomy
Weymann, R. J.
Strittmatter, P. A.
(51-850 188-78-56)

NGR 03-002-382 University of Arizona 1154
Determination of atmospheric ozone profiles above 20 km
Period *Obligations*
12/01/73-12/31/75 FY75: \$20,000 TOTAL: \$39,900
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Herman, B. M. GSFC/Heath, D. F. 31-Atmos Sci
(51-680 175-61-42) (51-680 175-61-44)

NGR 03-002-388 University of Arizona 1155
Lunar sample analysis
Period *Obligations*
02/01/74-01/31/76 FY75: \$38,000 TOTAL: \$68,700
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Drake, M. J. JSC/Harris, J. W. 12-Chemistry
(72-810 388-10-01)

NGR 03-002-390 University of Arizona 1156
Mapping structure of galactic center
Period *Obligations*
10/01/73-09/31/75 FY75: \$34,100 TOTAL: \$56,080
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hoffman, W. F. ARC/Cameron, R. M. 11-Astronomy
Harvey, P. ARC/Gillespie, C. M., Jr.
(21-850 352-02-03)

NGR 03-002-392 University of Arizona 1157
Investigation of infrared spectroscopy of comet Kohoutek
Period *Obligations*
12/10/73-09/09/74 FY75: TOTAL: \$9,700
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Fink, U. W. GSFC/Hobbs, R. W. 11-Astronomy
GSFC/Maran, S. P.
(51-840 196-41-53)

NGR 03-002-393 University of Arizona 1158
Study of high resolution narrow band photography of comet Kohoutek with an image intensifier
Period *Obligations*
12/10/73-09/09/74 FY75: TOTAL: \$4,286
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Larson, S. M. GSFC/Hobbs, R. W. 11-Astronomy
GSFC/Maran, S. P.
(51-840 196-41-53)

NSG 2042 University of Arizona 1159
Photometric observations between 2 and 35 microns from the C-141
Period *Obligations*
10/24/74-10/31/75 FY75: \$25,000 TOTAL: \$25,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Woolf, N. ARC/Cameron, R. M. 11-Astronomy
ARC/Gillespie, C. M., Jr.
(21-850 352-02-03)

NSG 5001 University of Arizona 1160
Large space telescope diffraction limited camera investigations
Period *Obligations*
04/01/74-02/29/76 FY75: \$3,371 TOTAL: \$12,315
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Angel, J. R. GSFC/Sobieski, S. 11-Astronomy
GSFC/Meese, K. J.
(51-850 188-78-56)

NSG 5022 University of Arizona 1161
Investigation of the basic foundation of masers and lasers
Period *Obligations*
09/01/74-09/30/75 FY75: \$20,000 TOTAL: \$20,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lamb, W. E., Jr. GSFC/McAvoy, N. A. 13-Physics
(51-704 502-03-11)

NSG 5023 University of Arizona 1162
Lightning detection study
Period *Obligations*
09/01/74-09/30/75 FY75: \$15,000 TOTAL: \$15,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Krider, E. P. GSFC/Le Vine, D. M. 31-Atmos Sci
(51-680 683-74-26)

NSG 5043 University of Arizona 1163
Observational and theoretical studies of the atmosphere of Venus
Period *Obligations*
01/01/75-12/31/75 FY75: \$15,988 TOTAL: \$15,988
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gehrels, A. M. GSFC/Hansen, J. E. 11-Astronomy
GSFC/Thaddeus, P.
(51-704 502-23-54)

**NASA'S UNIVERSITY PROGRAM
ARIZONA (Continued)**

NSG 5046 University of Arizona **1164**
Theoretical studies of acquisition of radiative transfer
Period *Obligations*
01/01/75-12/31/75 **FY75: \$29,000** **TOTAL: \$29,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Herman, B. M. GSFC/Curran, R. J. 31-Atmos Sci
(51-680 175-11-42)

NSG 7011 University of Arizona **1165**
Radiation history of meteorites
Period *Obligations*
03/01/74-02/28/76 **FY75: \$25,000** **TOTAL: \$43,250**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wilkening, L. L. HQ-SM/Hanley, J. B. 32-Geological Sci
HQ-SM/Roberson, F. I.
(10-810 195-20-04)

NSG 7014 University of Arizona **1166**
Comparison of color composite photography with other lunar data
Period *Obligations*
03/01/74-02/28/75 **FY75:** **TOTAL: \$2,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Whitaker, E. A. HQ-SM/Hanley, J. B. 32-Geological Sci
HQ-SM/Roberson, F. I.
(10-810 383-20-03)

NSG 7020 University of Arizona **1167**
Investigation of lunar induced and permanent magnetism in the lunar data analysis and synthesis program
Period *Obligations*
03/01/74-12/31/75 **FY75: \$90,000** **TOTAL: \$132,291**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sonett, C. P. HQ-SM/Hanley, J. B. 32-Geological Sci
HQ-SM/Roberson, F. I.
(10-810 383-20-03)

NSG 7024 University of Arizona **1168**
Study of the earth's magnetosphere and solar wind
Period *Obligations*
02/01/74-10/31/75 **FY75: \$50,000** **TOTAL: \$100,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sonett, C. P. HQ-SG/Berko, F. W. 13-Physics
HQ-SG/Schmerling, E. R.
(10-850 385-36-00)

NSG 7045 University of Arizona **1169**
Interiors of the giant planets
Period *Obligations*
05/22/74-03/31/76 **FY75: \$30,000** **TOTAL: \$60,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hubbard, W. B., Jr. HQ-SL/Brunk, W. E. 11-Astronomy
(10-840 196-41-85)

NSG 7070 University of Arizona **1170**
Planetary spectroscopy
Period *Obligations*
06/01/74-05/31/78 **FY75: \$125,949** **TOTAL: \$125,949**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Fink, U. W. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SL/Fellows, R. F.
(10-840 196-41-80)

NSG 7101 University of Arizona **1171**
Study structure of astrophysical plasma and turbulent fluctuations
Period *Obligations*
11/18/74-08/31/75 **FY75: \$40,000** **TOTAL: \$40,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jokippi, J. HQ-SG/Opp, A. G. 11-Astronomy
(10-850 188-46-56)

NSG 7114 University of Arizona **1172**
Infrared observations of the planets
Period *Obligations*
02/20/75-01/31/76 **FY75: \$22,867** **TOTAL: \$22,867**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Unavailable HQ-SL/Brunk, W. E. 11-Astronomy
(10-840 196-41-80)

NSG 7123 University of Arizona **1173**
Jupiter colloquium
Period *Obligations*
02/20/75-01/31/76 **FY75: \$15,799** **TOTAL: \$15,799**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Unavailable HQ-SL/Fe, R. F. 11-Astronomy
(10-840 384-47-81)

ARKANSAS

NAS 9-14134 Harding College **1174**
Study of optimal protocol for cardiovascular and muscular efficiency
Period *Obligations*
01/01/74-03/31/76 **FY75: \$43,000** **TOTAL: \$83,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Olree, H. D. JSC/Rummel, J. A. 52-Clinical Med
(72-970 970-51-14)

NAS 5-20810 University of Arkansas - Fayetteville **1175**
ERTS follow-on investigation
Period *Obligations*
01/28/75-11/28/76 **FY75: \$58,507** **TOTAL: \$58,507**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
MacDonald, H. GSFC/Szajna, E. F. 39-Env Sci, NEC
(51-680 641-15-00)

NAS 9-14251 University of Arkansas - Fayetteville **1176**
Remote sensing of soil moisture content
Period *Obligations*
06/01/74-05/31/76 **FY75: \$19,000** **TOTAL: \$39,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Waite, W. P. JSC/Potter, A. E. 19-Phys Sci, NEC
MacDonald, H. C. JSC/Whitehead, V. F.
(72-680 177-51-84)

NGL 04-001-007 University of Arkansas - Fayetteville **1177**
Application of lasers to instrumentation & measurement techniques
Period *Obligations*
06/15/70-10/01/75 **FY75: \$15,000** **TOTAL: \$344,699**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mazumder, M. K. ARC/Ragent, B. 41-Aero Engr
ARC/Seegmiller, H. L.
(21-702 505-06-13) (21-702 505-06-23) (21-840 186-68-60)

**NASA'S UNIVERSITY PROGRAM
CALIFORNIA (Continued)**

NAS 5-23315	California Institute of Technology	1191			
Cosmic X-ray experiment for HEAO-2					
<i>Period</i>		<i>Obligations</i>			
11/15/73-04/15/78	FY75: \$177,000	TOTAL: \$307,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Garmire, G. P.	GSFC/Wrublik, D. P.	11-Astronomy			
(51-850 832-12-00)					
NAS 8-27403	California Institute of Technology	1192			
HEAO-MISSION B experiment feasibility study & diffuse X-ray measurement					
<i>Period</i>		<i>Obligations</i>			
06/29/71-11/30/73	FY75:	TOTAL: \$285,366			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Stone, E. C.	MSFC/Krome, H. O.	11-Astronomy			
(62-850 832-12-00)	MSFC/Cochran, J.	(62-850 832-00-00)			
NAS 8-27978	California Institute of Technology	1193			
Design, development & operation of the ACR-7 heavy nuclei experiment under the HEAO program					
<i>Period</i>		<i>Obligations</i>			
06/23/72-01/31/78	FY75: \$50,000	TOTAL: \$158,560			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Stone, E. C.	MSFC/Krome, H. O.	11-Astronomy			
(62-850 832-12-00)	MSFC/Cochran, J.	(62-850 832-00-00)			
NAS 8-28028	California Institute of Technology	1194			
Development of instrumentation for observation of solar octine regions					
<i>Period</i>		<i>Obligations</i>			
01/21/72-05/20/74	FY75:	TOTAL: \$230,175			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Zirin, H.	MSFC/Reichmann, E. J.	11-Astronomy			
(62-960 996-00-00)	(62-980 975-84-00)				
NAS 8-29313	California Institute of Technology	1195			
Dynamics of unsteady cavitating cascades					
<i>Period</i>		<i>Obligations</i>			
09/28/72-10/27/75	FY75: \$59,946	TOTAL: \$221,012			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Acosta, A. J.	MSFC/Gross, L. A.	46-Mech Engr			
Brennen, C.	MSFC/Stinson, H. P., Jr.				
(62-920 983-15-00)					
NGL 05-002-003	California Institute of Technology	1196			
Basic scientific research on lunar & planetary exploration					
<i>Period</i>		<i>Obligations</i>			
12/01/59-11/30/77	FY75: \$159,068	TOTAL: \$2,469,943			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Muhleman, D. O.	HQ-SL/Brunk, W. E.	11-Astronomy			
(10-840 196-41-80)	HQ-SL/Fellows, R. F.	(10-840 185-00-00)			
NGL 05-002-007	California Institute of Technology	1197			
Space related research in cosmic rays, interplanetary magnetic fields, solar physics, theoretical astrophysics, planetary spectroscopy & infrared astronomy					
<i>Period</i>		<i>Obligations</i>			
05/20/63-09/30/75	FY75:	TOTAL: \$4,645,302			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Neugebauer, G.	HQ-SG/Brunk, W. E.	11-Astronomy			
(10-850 188-00-00)	(10-370 183-00-00)	(10-840 185-00-00)			
NGL 05-002-034	California Institute of Technology	1198			
Research in solar flares and the solar atmosphere					
<i>Period</i>		<i>Obligations</i>			
05/18/65-09/01/76	FY75: \$104,000	TOTAL: \$1,952,353			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Zirin, H.	HQ-SG/Weldon, J. M.	11-Astronomy			
Mazumder, M. K.	HQ-SG/Jordan, S. D.				
(10-850 188-38-52)					
NGL 05-002-069	California Institute of Technology	1199			
Theoretical investigation of planetary interiors					
<i>Period</i>		<i>Obligations</i>			
06/12/67-08/30/77	FY75: \$44,362	TOTAL: \$553,729			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Anderson, D. L.	HQ-SM/Bryson, R. P.	32-Geological Sci			
(10-810 195-20-02)	HQ-SM/Roberson, F. I.	(10-810 195-00-00)			(10-810 383-09-56)
NGL 05-002-105	California Institute of Technology	1200			
Shock effects in minerals					
<i>Period</i>		<i>Obligations</i>			
08/16/68-03/31/78	FY75: \$27,326	TOTAL: \$637,276			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Ahrens, T. J.	HQ-SM/Bryson, R. P.	32-Geological Sci			
(10-810 195-20-03)	HQ-SM/Roberson, F. I.	(10-810 195-42-65)			(10-810 383-20-03)
NGL 05-002-134	California Institute of Technology	1201			
Modern astronomical instrument development					
<i>Period</i>		<i>Obligations</i>			
10/27/69-09/30/77	FY75: \$59,618	TOTAL: \$478,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Oke, J. B.	HQ-SG/Rosendhal, J. D.	11-Astronomy			
Dennison, E. W.	HQ-SG/Roman, N. G.				
(10-850 188-41-51)					
NGL 05-002-136	California Institute of Technology	1202			
Research on turbomachines					
<i>Period</i>		<i>Obligations</i>			
06/02/69-04/30/76	FY75:	TOTAL: \$248,325			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Rannie, W. D.	LERC/Sandercock, D. M.	41-Aero Engr			
(22-704 501-04-03)	(22-762 132-00-00)				
NGL 05-002-140	California Institute of Technology	1203			
Research in planetary astronomy					
<i>Period</i>		<i>Obligations</i>			
04/11/69-03/31/78	FY75: \$76,400	TOTAL: \$383,905			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Munch, G.	HQ-SL/Brunk, W. E.	11-Astronomy			
(10-840 196-41-80)	HQ-SL/Fellows, R. F.	(10-840 185-00-00)			
NGL 05-002-187	California Institute of Technology	1204			
Lunar sample analysis					
<i>Period</i>		<i>Obligations</i>			
02/09/71-01/31/76	FY75:	TOTAL: \$655,485			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Silver, L. T.	JSC/Harris, J. W.	12-Chemistry			
(72-810 388-10-02)					

**NASA'S UNIVERSITY PROGRAM
CALIFORNIA (Continued)**

NGL 05-002-188 California Institute of Technology 1205
Lunar sample analysis
Period *Obligations*
02/03/71-01/31/78 FY75: \$421,271 TOTAL: \$2,392,653
Prin. Invest. NASA Tech. Officer CASE Category
Wasserburg, G. J. JSC/Harris, J. W. 12-Chemistry
(72-810 388-10-02)

NGL 05-002-190 California Institute of Technology 1206
Lunar sample analysis
Period *Obligations*
01/19/71-01/31/78 FY75: \$120,380 TOTAL: \$624,150
Prin. Invest. NASA Tech. Officer CASE Category
Epstein, S. JSC/Harris, J. W. 13-Physics
(72-810 388-10-02)

NGL 05-002-207 California Institute of Technology 1207
Research in infrared and X-ray astronomy
Period *Obligations*
02/18/71-09/30/77 FY75: \$85,000 TOTAL: \$465,000
Prin. Invest. NASA Tech. Officer CASE Category
Ladle, G. H. HQ-SG/Boggess, N. W. 11-Astronomy
Garmire, G. P. HQ-SG/Roman, N. G.
(10-850 188-41-55)

NGL 05-002-229 California Institute of Technology 1208
Experimental study of flow about a stalled two-dimensional
airflow
Period *Obligations*
05/11/71-12/01/75 FY75: \$79,300 TOTAL: \$187,320
Prin. Invest. NASA Tech. Officer CASE Category
Coles, D. E. ARC/Olson, L. E. 41-Aero Engr
Roshko, A. ARC/Rossow, V. J.
(21-702 514-52-01) (21-702 505-06-31) (10-371 340-00-00)

NGL 05-002-338 California Institute of Technology 1209
Petrologic and microprobe investigations on isotopically dated
lunar samples
Period *Obligations*
02/01/74-01/31/78 FY75: \$102,850 TOTAL: \$216,712
Prin. Invest. NASA Tech. Officer CASE Category
Albee, A. L. JSC/Harris, J. W. 13-Physics
(72-810 388-10-01)

NGR 05-002-114 California Institute of Technology 1210
Radio interferometry of Mars and Venus
Period *Obligations*
10/11/68-09/30/75 FY75: \$44,055 TOTAL: \$230,871
Prin. Invest. NASA Tech. Officer CASE Category
Muhleman, D. O. HQ-SL/Brunk, W. E. 11-Astronomy
(10-840 196-41-82)

NGR 05-002-117 California Institute of Technology 1211
Analysis and evaluation of alternative approaches photography
from a Mercury/Venus flyby
Period *Obligations*
10/01/68-09/30/75 FY75: \$70,000 TOTAL: \$502,775
Prin. Invest. NASA Tech. Officer CASE Category
Murray, B. C. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Holt, H. E.
(10-840 185-50-81) (10-840 185-00-00)

NGR 05-002-121 California Institute of Technology 1212
A study of water metabolism in neurospora crassaa
Period *Obligations*
01/01/69-12/31/75 FY75: \$57,770 TOTAL: \$273,999
Prin. Invest. NASA Tech. Officer CASE Category
Horowitz, N. H. HQ-SL/Young, R. S. 51-Biology
(10-840 192-55-64)

NGR 05-002-142 California Institute of Technology 1213
Research in solar physics
Period *Obligations*
06/12/69-09/30/75 FY75: \$5,400 TOTAL: \$286,333
Prin. Invest. NASA Tech. Officer CASE Category
Leighton, R. B. HQ-SG/Weldon, J. M. 11-Astronomy
(10-850 188-38-51)

NGR 05-002-160 California Institute of Technology 1214
Research in particles and fields
Period *Obligations*
10/27/69-09/30/75 FY75: \$300,000 TOTAL: \$1,645,000
Prin. Invest. NASA Tech. Officer CASE Category
Vogt, R. E. HQ-SG/Opp, A. G. 11-Astronomy
HQ-SG/Kavanagh, L. D., Jr.
(10-850 188-46-56) (10-850 385-46-00)

NGR 05-002-185 California Institute of Technology 1215
Design and supervision of an infrared sky noise survey
Period *Obligations*
06/25/70-06/30/74 FY75: TOTAL: \$292,608
Prin. Invest. NASA Tech. Officer CASE Category
Westphal, J. A. HQ-SL/Brunk, W. E. 11-Astronomy
(10-840 196-41-80) (10-840 196-00-00)

NGR 05-002-256 California Institute of Technology 1216
Study and research on experimental tests of gravitation theory
Period *Obligations*
02/23/72-12/31/76 FY75: \$25,000 TOTAL: \$90,000
Prin. Invest. NASA Tech. Officer CASE Category
Thorne, K. S. HQ-SG/Boggess, N. W. 11-Astronomy
HQ-SG/Roman, N. G.
(10-850 188-41-54)

NGR 05-002-281 California Institute of Technology 1217
High angular resolution of H II regions and associated galactic
sources
Period *Obligations*
03/01/73-09/01/75 FY75: \$49,980 TOTAL: \$89,960
Prin. Invest. NASA Tech. Officer CASE Category
Werner, M. W. ARC/Cameron, R. M. 11-Astronomy
Becklin, E. E. ARC/Gillespie, C. M., Jr.
(21-850 352-02-03)

NGR 05-002-284 California Institute of Technology 1218
High angular resolution cosmic X-ray astronomy observations
in the energy band 0.15-2Ke and XUV observations of early
stars from an attitude controlled rocket
Period *Obligations*
03/05/73-08/31/75 FY75: \$139,606 TOTAL: \$399,606
Prin. Invest. NASA Tech. Officer CASE Category
Garmire, G. P. HQ-SG/Opp, A. G. 11-Astronomy
HQ-SG/Lazarus, A. J.
(10-850 879-11-00) (10-850 879-00-00)

**NASA'S UNIVERSITY PROGRAM
CALIFORNIA (Continued)**

NGR 05-002-294 California Institute of Technology 1219
Analysis of OGO-5 and OGO-7 X-ray data
Period *Obligations*
06/27/73-01/31/75 FY75: TOTAL: \$30,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Zirin, H. HQ-SG/Hallenbeck, D. R. 11-Astronomy
(10-850 385-38-00)

NGR 05-002-296 California Institute of Technology 1220
Selected X-ray studies to be performed using data from the Uhuru
(SAS-A) satellite
Period *Obligations*
07/01/73-01/15/75 FY75: TOTAL: \$25,046
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Garmire, G. P. HQ-SG/Hallenbeck, D. R. 11-Astronomy
(10-850 385-41-00)

NGR 05-002-302 California Institute of Technology 1221
Geology and geomorphology of Martian shield volcanos
Period *Obligations*
02/19/73-06/30/74 FY75: TOTAL: \$12,119
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Shoemaker, E. M. HQ-SL/Dwornik, S. E. 32-Geological Sci
(10-840 185-00-00)

NGR 05-002-303 California Institute of Technology 1222
Systematic search program for new Apollo Amor asteroids
Period *Obligations*
08/01/73-07/31/75 FY75: \$40,227 TOTAL: \$60,232
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Shoemaker, E. M. HQ-SL/Dwornik, S. E. 32-Geological Sci
Helin, E. HQ-SL/Holt, H. E.
(10-840 185-50-81) (10-840 185-00-00)

NGR 05-002-305 California Institute of Technology 1223
Analysis of Mariner 9 imaging data
Period *Obligations*
11/01/73-01/31/75 FY75: TOTAL: \$20,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Murray, B. C. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Holt, H. E.
(10-840 384-50-80) (10-840 384-00-00)

NGR 05-002-308 California Institute of Technology 1224
Mars related biological studies
Period *Obligations*
03/06/73-08/31/76 FY75: \$41,015 TOTAL: \$151,870
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Horowitz, N. H. ARC/Chang, S. 59-Life Sci, NEC
ARC/De Vincenzi, D. L.
(21-840 192-55-64) (21-840 192-00-00)

NGR 05-002-310 California Institute of Technology 1225
Geochemistry of biomolecules
Period *Obligations*
03/06/73-06/30/75 FY75: \$27,719 TOTAL: \$90,389
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bonner, J. HQ-SL/Young, R. S. 32-Geological Sci
(10-840 192-55-62)

NGR 05-002-311 California Institute of Technology 1226
Investigation of low dispersion spectrograph large space tele-
scope
Period *Obligations*
10/01/73-06/30/75 FY75: \$5,169 TOTAL: \$15,843
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Oke, J. B. GSFC/Sobieski, S. 11-Astronomy
GSFC/Meese, K. J.
(51-850 893-78-56) (51-850 188-78-58) (51-850 188-78-56)

NGR 05-002-316 California Institute of Technology 1227
Planetary seismological studies
Period *Obligations*
05/25/73-10/31/74 FY75: TOTAL: \$21,041
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Anderson, D. L. HQ-SL/Dwornik, S. E. 32-Geological Sci
(10-840 185-50-81)

NGR 05-002-333 California Institute of Technology 1228
Lunar sample analysis
Period *Obligations*
02/01/74-01/31/76 FY75: \$55,000 TOTAL: \$101,100
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tombrello, T. A. JSC/Harris, J. W. 13-Physics
(72-810 388-10-02)

NGR 05-002-340 California Institute of Technology 1229
Virtual integration of planetary exploration Robot
Period *Obligations*
12/01/73-01/31/76 FY75: \$40,000 TOTAL: \$70,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ingargiola, G. HQ-RE/Pontious, C. E. 49-Engr, NEC
Weinstein, M. JPL/Wedel, J. J.
(10-704 502-03-31)

NGR 05-002-345 California Institute of Technology 1230
A 65-100 cm aperture photo-heliograph for the space shuttle
Period *Obligations*
10/01/73-10/31/75 FY75: \$60,000 TOTAL: \$220,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Zirin, H. HQ-SG/Timothy, A. F. 13-Physics
HQ-SG/Jordan, S. D.
(10-850 188-38-64)

NSG 1005 California Institute of Technology 1231
Utilization of stags to determine knockdown factors from
measured initial imperfections
Period *Obligations*
07/01/74-12/31/75 FY75: TOTAL: \$26,917
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Babcock, C. D., Jr. LARC/Davis, R. C. 49-Engr, NEC
Arbocz, J. LARC/Stephens, W. B.
(23-704 502-32-01)

NSG 5058 California Institute of Technology 1232
Seismotectonic studies of areas of major world-wide earthquakes
utilizing ERTS images
Period *Obligations*
04/01/75-03/31/76 FY75: \$8,034 TOTAL: \$8,034
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Allen, C. R. GSFC/Lowman, P. D. 39-Env Sci, NEC
(51-630 161-01-02)

**NASA'S UNIVERSITY PROGRAM
CALIFORNIA (Continued)**

NSG 7023 California Institute of Technology 1233
Synthesis of particle exposure data for lunar samples

<i>Period</i>	<i>Obligations</i>	
04/01/74-09/30/75	FY75: TOTAL: \$36,932	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Feldman, P. D.	HQ-SM/Bryson, R. P.	32-Geological Sci
Woolum, D. S.	HQ-SM/Roberson, F. I.	

(10-810 383-20-04)

NSG 7084 California Institute of Technology 1234
Technical evaluation and development of the ion probe

<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/76	FY75: \$41,107 TOTAL: \$41,107	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wasserburg, G. J.	HQ-SM/Bryson, R. P.	32-Geological Sci
	HQ-SM/Roberson, F. I.	

(10-810 195-20-06)

NSG 7094 California Institute of Technology 1235
Reduction of Mariner 71 infrared radiometer data

<i>Period</i>	<i>Obligations</i>	
07/01/74-09/30/76	FY75: \$18,567 TOTAL: \$18,567	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Neugebauer, G.	HQ-SL/Fellows, R. F.	32-Geological Sci
	HQ-SL/Brunk, W. E.	

(10-840 384-47-81)

NSG 7112 California Institute of Technology 1236
Research on time-sequenced mosaics of the ultra-violet images of Venus clouds obtained by Mariner 10

<i>Period</i>	<i>Obligations</i>	
07/01/74-03/31/76	FY75: \$25,000 TOTAL: \$25,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Murray, B. C.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

(10-840 384-47-81)

NSG 7125 California Institute of Technology 1237
Scientific rationale and feasibility of developing a planetary scanning electron microscope

<i>Period</i>	<i>Obligations</i>	
04/01/75-03/31/76	FY75: \$15,000 TOTAL: \$15,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Albee, A. L.	HQ-SL/Dwornik, S. E.	19-Phys Sci, NEC
	HQ-SL/Holt, H. E.	

(10-840 185-47-81)

NSG 7129 California Institute of Technology 1238
Relationship of impact cratering to the evolution of the lunar surface

<i>Period</i>	<i>Obligations</i>	
04/01/75-03/31/76	FY75: \$40,000 TOTAL: \$40,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ahrens, T. J.	HQ-SM/Bryson, R. P.	32-Geological Sci
	HQ-SM/Roberson, F. I.	

(10-810 383-20-03)

NSG 7136 California Institute of Technology 1239
Millimeter wave interferometry

<i>Period</i>	<i>Obligations</i>	
02/01/75-01/31/76	FY75: \$50,150 TOTAL: \$50,150	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Leighton, R. B.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Fellows, R. F.	

(10-840 196-41-82)

NSG 7140 California Institute of Technology 1240
Support for reduction of joint infrared and Copernicus X-ray observations of Cygnus X-3

<i>Period</i>	<i>Obligations</i>	
05/01/75-10/31/75	FY75: \$5,154 TOTAL: \$5,154	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Neugebauer, G.	HQ-SG/Boggess, N. W.	11-Astronomy
	HQ-SG/Roman, N. G.	

(10-850 385-41-00)

NSG 9019 California Institute of Technology 1241
Shock compression measurements on lunar samples

<i>Period</i>	<i>Obligations</i>	
10/01/74-01/31/76	FY75: \$91,500 TOTAL: \$91,500	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harger, R. O.	JSC/Harris, J. W.	19-Phys Sci, NEC
(72-810 388-10-01)	(72-810 388-10-03)	

NSR 05-002-071 California Institute of Technology 1242
Feasibility study for large aperture solar telescope to fly on Apollo Telescope Mount (ATM) system

<i>Period</i>	<i>Obligations</i>	
01/24/67-08/31/73	FY75: TOTAL: \$943,808	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Zirin, H.	HQ-SG/Chase, R. H.	11-Astronomy
	HQ-SG/Oertel, G. K.	

(10-850 188-00-00)

NCA 2-20601 California State College, Sonoma 1243
Study of the Panoche Valley ophiolite complex

<i>Period</i>	<i>Obligations</i>	
07/01/75-06/30/76	FY75: \$3,937 TOTAL: \$3,937	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Anderson, T.	ARC/Zill, L. P.	99-Multi-Discip

(21-810 195-21-04)

NCA 2-10501 California State University - Chico 1244
Reinforced composites for use as secondary structural materials for aircraft interiors

<i>Period</i>	<i>Obligations</i>	
07/01/74-09/15/74	FY75: \$1,000 TOTAL: \$1,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sours, C. F.	ARC/Zill, L. P.	47-Materials Engr

(21-704 501-21-22)

NCA 2-10502 California State University - Chico 1245
Effect of restricting the horizontal field of view on pilot performance

<i>Period</i>	<i>Obligations</i>	
09/01/74-06/30/75	FY75: \$1,250 TOTAL: \$1,250	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Huntsfinger, R.	ARC/Zill, L. P.	41-Aero Engr

(21-704 504-09-42)

**NASA'S UNIVERSITY PROGRAM
CALIFORNIA (Continued)**

NCA 2-10504 California State University - Chico 1246
Aircraft interior composite panels

<i>Period</i>	<i>Obligations</i>	
06/15/75-09/15/75	FY75: \$3,800	TOTAL: \$3,800
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sours, C. F.	ARC/Zill, L. P.	41-Aero Engr
(21-702 505-08-21)		

NAS 1-13656 California State University - Long Beach 1253
Unsteady turbulent flows

<i>Period</i>	<i>Obligations</i>	
10/24/74-03/10/76	FY75: \$29,997	TOTAL: \$29,997
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cebeci, T.	ARC/Carr, L. W.	41-Aero Engr
LARC/Young, W. H., Jr.		
(23-702 505-10-21)		

NGL 05-076-001 California State University - Chico 1247
Life formation in planetary atmospheres

<i>Period</i>	<i>Obligations</i>	
02/07/71-02/01/78	FY75: \$13,717	TOTAL: \$64,492
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Regas, J. L.	ARC/Boese, R. W.	31-Atmos Sci
ARC/Giver, L. P.		
(21-680 176-11-11) (21-840 196-41-67)		

NCA 2-85502 California State University - Los Angeles 1254
Photochemistry of the lower Jovian atmosphere

<i>Period</i>	<i>Obligations</i>	
01/01/75-12/31/75	FY75: \$5,200	TOTAL: \$5,200
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Goldwhite, H.	ARC/Zill, L. P.	11-Astronomy
(21-840 192-55-61)		

NCA 2-53501 California State University - Fullerton 1248
Structure function relationships in thermophile membranes

<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/75	FY75: \$6,572	TOTAL: \$6,572
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Esser, A. F.	ARC/Zill, L. P.	51-Biology
(21-840 192-55-64)		

NGR 05-062-002 California State University - Northridge 1255
An experimental evaluation of the stresses in hollow rolling elements

<i>Period</i>	<i>Obligations</i>	
01/25/72-02/28/75	FY75:	TOTAL: \$35,690
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nypan, L. J.	LERC/Coe, H. H.	46-Mech Engr
LERC/Scibbe, H. W.		
(22-704 501-24-10)		

NCA 2-53601 California State University - Fullerton 1249
Structure-function relationships in thermophile membranes

<i>Period</i>	<i>Obligations</i>	
07/01/75-06/30/76	FY75: \$9,033	TOTAL: \$9,033
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Esser, A. F.	ARC/Zill, L. P.	51-Biology
(21-840 192-55-64)		

NSG 3065 California State University - Northridge 1256
Study of rolling element dynamic interactions with separators and raceway paths

<i>Period</i>	<i>Obligations</i>	
05/15/75-05/14/76	FY75: \$44,980	TOTAL: \$44,980
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nypan, L. J.	LERC/Coe, H. H.	46-Mech Engr
LERC/Scibbe, H. W.		
(22-702 505-04-41)		

NGR 05-071-002 California State University - Fullerton 1250
Spectroscopic studies of interstellar dust

<i>Period</i>	<i>Obligations</i>	
04/29/71-03/31/74	FY75:	TOTAL: \$57,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Johnson, F. M.	HQ-SG/Dubin, M.	11-Astronomy
Young, R. S. HQ-SL/Young, R. S.		
(10-850 385-00-00)		

NCA 2-55501 California State University - Sacramento 1257
Terminal area effectiveness for future aircraft

<i>Period</i>	<i>Obligations</i>	
07/01/74-10/31/74	FY75: \$5,028	TOTAL: \$5,028
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Happ, W. H.	ARC/Zill, L. P.	44-Civil Engr
(21-701 791-93-03)		

NGR 05-071-005 California State University - Fullerton 1251
Computation of cyclic predictor-corrector methods and application to satellite orbit problems

<i>Period</i>	<i>Obligations</i>	
07/01/72-06/30/74	FY75:	TOTAL: \$20,285
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Pierce, S.	GSFC/Velez, C. E.	21-Mathematics
(51-500 150-00-00)		

NCA 2-55502 California State University - Sacramento 1258
Terminal area effectiveness for future aircraft

<i>Period</i>	<i>Obligations</i>	
07/01/74-02/24/75	FY75: \$9,672	TOTAL: \$9,672
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Luther, L. C.	ARC/Zill, L. P.	41-Aero Engr
(21-702 513-53-06)		

NGR 05-071-008 California State University - Fullerton 1252
Electrocyclic reactions in the interstellar media

<i>Period</i>	<i>Obligations</i>	
04/25/73-05/31/75	FY75: \$24,791	TOTAL: \$48,502
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wegner, P. A.	HQ-SL/Young, R. S.	12-Chemistry
Bailey, D. T.		
(10-840 192-55-61)		

NGR 05-058-003 California State University - Sacramento 1259
Development of combustion stability specifications and verification procedures for liquid propellant rocket engines

<i>Period</i>	<i>Obligations</i>	
02/23/72-01/30/76	FY75: \$5,000	TOTAL: \$14,234
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Reardon, F. H.	LERC/Priem, R. J.	42-Astro Engr
(22-704 506-21-53) (22-704 502-04-25)		

**NASA'S UNIVERSITY PROGRAM
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NSG 2005	De Anza College	1260	NSG 2011	Pomona College	1267
Geotechnical investigation of landslide			Airborne 91-cm telescope raster scanning system		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/15/74-01/01/76	FY75: TOTAL: \$15,000		02/01/74-10/30/74	FY75: TOTAL: \$1,824	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Greisen, K. I.	GSFC/Trombka, J. I.	32-Geological Sci	Webb, W.	ARC/Cameron, R. M.	11-Astronomy
(21-680 177-53-11)			(21-850 352-02-03)	ARC/Gillespie, C. M., Jr.	
NSG 2001	Foothill College	1261	NGR 05-084-002	Sacramento City College	1268
Motivation techniques for the teaching of astronomy			Correlation of type III radio events with hard X-ray and H data and analysis of in-process phase of solar flares		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
02/01/74-06/01/75	FY75: TOTAL: \$26,631		11/01/73-01/31/75	FY75: TOTAL: \$10,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kellman, S. A.	ARC/Reynolds, R. T.	11-Astronomy	Vorpahl, J. A.	HQ-SG/Oertel, G. K.	11-Astronomy
(21-030 997-00-00)			(10-850 385-38-00)	HQ-SG/Weldon, J. M.	
NAS 2-8921	Harvey Mudd College	1262	NAS 5-20772	San Diego State University	1269
Research on methods of obtaining on-axis velocity component for a laser velocimeter			Atmospheric ozone determination study		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/24/75-10/30/75	FY75: \$5,000 TOTAL: \$5,000		10/11/74-10/11/75	FY75: \$13,000 TOTAL: \$13,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Woodson, T. T.	ARC/Orloff, K.	41-Aero Engr	Angione, R. J.	GSFC/Roosen, R. G.	31-Atmos Sci
(21-702 514-52-01)			(51-702 743-34-22)		
NAS 2-8925	Harvey Mudd College	1263	NAS 5-23249	San Diego State University	1270
Generation and analysis of a mono-dispersed aerosol			Atmospheric transmission measurements		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/06/75-10/30/75	FY75: \$7,300 TOTAL: \$7,300		05/25/73-09/27/75	FY75: \$14,999 TOTAL: \$43,998	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Woodson, T. T.	ARC/Orloff, K.	41-Aero Engr	Angione, R. J.	GSFC/Brandt, J. C.	11-Astronomy
(21-702 514-52-01)			(51-850 188-45-53)	(51-850 188-38-53)	(51-704 501-24-20)
NCA 2-90401	California State University - Hayward	1264	NSG 7026	San Diego State University	1271
Development of testing and training programs to produce groups of professionals for high-stress missions			Thermodynamic models of lunar meteorite impact incorporating a target porosity parameter		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/01/74-06/18/75	FY75: \$2,250 TOTAL: \$2,250		06/01/74-05/31/76	FY75: \$31,961 TOTAL: \$52,879	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sieber, J. E.	ARC/Zill, L. P.	61-Biol Aspects	Reh fuss, D. E.	HQ-SM/Bryson, R. P.	32-Geological Sci
(21-970 970-21-51)			(10-810 195-20-03)	HQ-SM/Roberson, F. I.	
NCA 2-90501	California State University - Hayward	1265	NCA 2-60410	San Francisco State University	1272
Racemization of amino acids in marine sediment as paleoenvironmental indicator			An investigation of binding between nucleotides and amino acids: an experiment on the origin of life		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
08/01/75-07/31/76	FY75: \$4,045 TOTAL: \$4,045		06/01/74-10/01/75	FY75: \$4,800 TOTAL: \$4,800	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Warnke, D. E.	ARC/Zill, L. P.	32-Geological Sci	Orenberg, J. B.	ARC/Zill, L. P.	12-Chemistry
(21-840 192-55-62)			(21-840 192-55-61)	(21-840 192-55-62)	
NAS 1-11854	Pomona College	1266	NCA 2-60411	San Francisco State University	1273
Participation in inorganic chemistry planning for the Viking 1975 missions			Investigation and development of an electronic system for the measurement of activity		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
08/09/72-03/31/77	FY75: \$1,000 TOTAL: \$17,435		06/01/74-09/01/75	FY75: \$4,000 TOTAL: \$4,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Baird, A. K.	LARC/Williams, T. S., Jr.	12-Chemistry	Catalano, G. T.	ARC/Zill, L. P.	45-Elec Engr
(23-840 815-20-00)	LARC/Glenny, W. R.		(21-970 970-21-12)		
	(23-840 815-00-00)				

**NASA'S UNIVERSITY PROGRAM
CALIFORNIA (Continued)**

NCA 2-60501 San Francisco State University 1274
Use of campus facilities
Period *Obligations*
08/01/74-07/15/75 FY75: \$53,936 TOTAL: \$53,936
Prin. Invest. NASA Tech. Officer CASE Category
Eisenberg, L. ARC/Zill, L. P. 99-Multi-Discip
(21-030 997-00-00)

NCA 2-60502 San Francisco State University 1275
Numerical solution of systems of first order partial differential equations
Period *Obligations*
01/01/75-06/15/75 FY75: \$5,234 TOTAL: \$5,234
Prin. Invest. NASA Tech. Officer CASE Category
Shaw, S. J. ARC/Zill, L. P. 21-Mathematics
(21-704 501-06-01)

NCA 2-60504 San Francisco State University 1276
Numerical studies of early phases of protostellar evolution
Period *Obligations*
06/01/75-06/01/76 FY75: \$4,500 TOTAL: \$4,500
Prin. Invest. NASA Tech. Officer CASE Category
Hagar, G. ARC/Zill, L. P. 11-Astronomy
(21-840 384-47-66)

NCA 2-60505 San Francisco State University 1277
An electron spin resonance spin-label study
Period *Obligations*
06/01/75-08/31/75 FY75: \$2,310 TOTAL: \$2,310
Prin. Invest. NASA Tech. Officer CASE Category
Plachy, W. Z. ARC/Zill, L. P. ~13-Physics
(21-840 192-55-64)

NCA 2-60506 San Francisco State University 1278
Formation of organic microstructures from simple prebiotic compounds
Period *Obligations*
05/15/75-05/14/76 FY75: \$1,800 TOTAL: \$1,800
Prin. Invest. NASA Tech. Officer CASE Category
Auleb, L. ARC/Zill, L. P. 51-Biology
(21-840 192-55-61)

NSG 2033 San Francisco State University 1279
Partial support for a conference series on planetary management problems
Period *Obligations*
06/01/74-06/17/75 FY75: \$73,600 TOTAL: \$474,225
Prin. Invest. NASA Tech. Officer CASE Category
Duckworth, E. L. ARC/Middaugh, C. W. 99-Multi-Discip
ARC/Billingham, J. (21-970 970-21-63) (21-970 970-24-02)
(21-840 185-47-69)

NCA 2-75304 San Jose State University 1280
Chemical evolution and the origin of life
Period *Obligations*
01/02/73-10/31/75 FY75: \$4,000 TOTAL: \$4,000
Prin. Invest. NASA Tech. Officer CASE Category
West, M. W. ARC/Zill, L. P. 59-Life Sci, NEC
(21-840 192-55-62)

NCA 2-75317 San Jose State University 1281
Fire-resistant aircraft structures
Period *Obligations*
04/01/73-04/16/76 FY75: \$12,000 TOTAL: \$12,000
Prin. Invest. NASA Tech. Officer CASE Category
Holnstrom, F. ARC/Zill, L. P. 47-Materials Engr
(21-702 505-01-31)

NCA 2-75401 San Jose State University 1282
Effective ways to train journalism students to report science activities
Period *Obligations*
09/01/73-09/30/75 FY75: \$4,800 TOTAL: \$4,800
Prin. Invest. NASA Tech. Officer CASE Category
Braun, D. E. ARC/Zill, L. P. 73-History
(21-030 021-01-98)

NCA 2-75409 San Jose State University 1283
Synthesis characterization and processing of bismaleimide resins
Period *Obligations*
03/01/74-06/30/75 FY75: \$3,500 TOTAL: \$3,500
Prin. Invest. NASA Tech. Officer CASE Category
Neptune, J. ARC/Zill, L. P. 12-Chemistry
(21-704 501-21-22)

NCA 2-75410 San Jose State University 1284
Thermal-oxidative degradation study on elastomer for use in aircraft tires
Period *Obligations*
03/01/74-10/01/75 FY75: \$4,500 TOTAL: \$4,500
Prin. Invest. NASA Tech. Officer CASE Category
Neptune, J. ARC/Zill, L. P. 41-Aero Engr
(21-702 505-08-31)

NCA 2-75411 San Jose State University 1285
Laboratory scale fire test facilities
Period *Obligations*
02/01/74-06/30/75 FY75: \$5,400 TOTAL: \$5,400
Prin. Invest. NASA Tech. Officer CASE Category
Sharfstein, H. ARC/Zill, L. P. 41-Aero Engr
(21-250 141-93-02)

NCA 2-75413 San Jose State University 1286
Neutron energy spectra and dose rates at aircraft altitudes
Period *Obligations*
05/01/74-07/31/75 FY75: \$4,500 TOTAL: \$4,500
Prin. Invest. NASA Tech. Officer CASE Category
Tucker, A. B. ARC/Zill, L. P. 41-Aero Engr
(21-704 501-97-01)

NCA 2-75414 San Jose State University 1287
Artificial meteor ablation products
Period *Obligations*
06/01/74-08/31/75 FY75: \$1,778 TOTAL: \$1,778
Prin. Invest. NASA Tech. Officer CASE Category
Maddock, M. ARC/Zill, L. P. 19-Phys Sci, NEC
(21-810 195-21-04)

**NASA'S UNIVERSITY PROGRAM
CALIFORNIA (Continued)**

NCA 2-75505 San Jose State University **1288**
Fire suppression and control systems for aircraft survivability
Period *Obligations*
09/01/74-06/30/75 **FY75: \$16,190** **TOTAL: \$16,190**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Myronuk, D. J. ARC/Zill, L. P. 41-Aero Engr
(21-702 505-01-31)

NCA 2-75515 San Jose State University **1295**
Nutrition and calcium homeostasis
Period *Obligations*
01/01/75-12/31/75 **FY75: \$5,000** **TOTAL: \$5,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tseng, R. ARC/Zill, L. P. 53-Other Medical
(21-970 970-21-61)

NCA 2-75506 San Jose State University **1289**
Study of the toxic effect of ammonia on microorganisms
Period *Obligations*
09/01/74-08/31/75 **FY75: \$5,500** **TOTAL: \$5,500**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Haight, R. D. ARC/Zill, L. P. 51-Biology
(21-840 192-55-64)

NCA 2-75518 San Jose State University **1296**
Applying computer/scanner land-use data in a mesoscale meteorology program
Period *Obligations*
03/15/75-01/30/76 **FY75: \$9,734** **TOTAL: \$9,734**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ellesen, R. ARC/Zill, L. P. 31-Atmos Sci
(21-680 175-21-11)

NCA 2-75509 San Jose State University **1290**
Two and three dimensional chemical/dynamical models of the stratosphere and mesosphere
Period *Obligations*
06/01/74-08/01/76 **FY75: \$15,320** **TOTAL: \$15,320**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Riegel, C. A. ARC/Zill, L. P. 31-Atmos Sci
(21-680 176-61-11)

NCA 2-75520 San Jose State University **1297**
Parameterization and boundary layer processes
Period *Obligations*
04/01/75-03/31/76 **FY75: \$9,950** **TOTAL: \$9,950**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Miller, A. ARC/Zill, L. P. 41-Aero Engr
(21-680 175-21-11)

NCA 2-75511 San Jose State University **1291**
Mechanisms of aspirin and stress involvement in the pathogenesis of gastric ulceration
Period *Obligations*
03/01/75-02/28/76 **FY75: \$9,800** **TOTAL: \$9,800**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sawrey, J. ARC/Zill, L. P. 53-Other Medical
(21-970 970-21-45)

NCA 2-75521 San Jose State University **1298**
Assessment of toxic threat
Period *Obligations*
03/17/75-07/17/75 **FY75: \$5,841** **TOTAL: \$5,841**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Young, W. ARC/Zill, L. P. 51-Biology
(21-704 501-21-22)

NCA 2-75512 San Jose State University **1292**
Cost effective analysis of communication and contract monitoring procedures
Period *Obligations*
01/01/75-05/31/75 **FY75: \$8,429** **TOTAL: \$8,429**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Monge, P. R. ARC/Zill, L. P. 99-Multi-Discip
(21-270 323-50-09)

NCA 2-75601 San Jose State University **1299**
Fire suppression and control systems
Period *Obligations*
07/01/75-12/31/75 **FY75: \$18,233** **TOTAL: \$18,233**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Myronuk, D. J. ARC/Zill, L. P. 49-Engr, NEC
(21-702 505-01-31) (21-704 501-31-90)

NCA 2-75513 San Jose State University **1293**
Improving utilization and efficiency of panel flutter
Period *Obligations*
01/20/75-01/20/76 **FY75: \$6,100** **TOTAL: \$6,100**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Leonard, T. E. ARC/Zill, L. P. 41-Aero Engr
(21-702 505-02-21)

NGL 05-046-002 San Jose State University **1300**
Angular acceleration in man
Period *Obligations*
09/01/67-08/31/77 **FY75: \$119,735** **TOTAL: \$590,883**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Clark, W. B. ARC/Stewart, J. D. 69-Psych, NEC
(21-704 504-09-33) (21-704 504-09-42) (21-704 501-29-02)

NCA 2-75514 San Jose State University **1294**
Investigations into the Johnson and Vand program for identification of multiphase powder diffraction data
Period *Obligations*
03/01/75-07/01/75 **FY75: \$1,640** **TOTAL: \$1,640**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Anderson, D. ARC/Zill, L. P. 13-Physics
Kyte, F. T.
(21-810 195-21-04)

NGR 05-046-011 San Jose State University **1301**
Investigation of transport parameters relating to hyperfiltration for waste water purification
Period *Obligations*
04/01/70-09/19/75 **FY75: \$35,382** **TOTAL: \$196,319**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Spitze, L. A. ARC/Wydeven, T. J. 12-Chemistry
(21-970 970-22-23)

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NAS 5-21960	Stanford University	1316			
Gravity only orbit control subsystem					
<i>Period</i>		<i>Obligations</i>			
12/21/73-12/26/75	FY75: \$15,000	TOTAL: \$177,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Debra, D. B.	GSFC/Lidston, J. M.	42-Astro Engr			
(51-630 681-01-01)	(51-630 369-06-03)	(51-630 161-79-68)			
NCA 2-45426	Stanford University	1323			
Study of selected management systems					
<i>Period</i>		<i>Obligations</i>			
06/15/74-06/30/75	FY75: \$1,000	TOTAL: \$1,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Pederson, C. A.	ARC/Zill, L. P.	99-Multi-Discip			
(21-030 997-00-00)					
NAS 5-23117	Stanford University	1317			
Systems definition /Phase B/ studies for the EGRET experiment on the HEAO-B spacecraft					
<i>Period</i>		<i>Obligations</i>			
06/22/72-09/30/74	FY75:	TOTAL: \$434,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Hofstadter, R.	GSFC/Wrublik, D. P.	11-Astronomy			
(51-850 832-12-00)	(51-850 832-00-00)				
NCA 2-45501	Stanford University	1324			
Polychlorinated biphenyls in sediments					
<i>Period</i>		<i>Obligations</i>			
09/01/74-08/31/75	FY75: \$71	TOTAL: \$71			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Leckie, J. O.	ARC/Zill, L. P.	39-Env Sci, NEC			
(21-970 970-24-01)					
NAS 9-5632	Stanford University	1318			
Active seismic experiment for ALSEP					
<i>Period</i>		<i>Obligations</i>			
02/03/66-01/31/76	FY75: \$42,055	TOTAL: \$734,743			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Kovach, R. L.	JSC/Eichelman, W. F.	32-Geological.Sci			
(72-810 383-31-00)					
NCA 2-45502	Stanford University	1325			
Calculation of rotational transition probabilities induced by collision between diatomic molecule					
<i>Period</i>		<i>Obligations</i>			
08/01/74-12/01/74	FY75: \$6,264	TOTAL: \$6,264			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Bershader, D.	ARC/Zill, L. P.	13-Physics			
(21-704 502-07-01)					
NAS 9-14716	Stanford University	1319			
Environmental stress and regulation of androgen secretion					
<i>Period</i>		<i>Obligations</i>			
06/17/75-06/17/77	FY75: \$40,000	TOTAL: \$40,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Davidson, J. M.	JSC/Leach, C. S.	59-Life Sci, NEC			
(72-970 970-51-16)					
NCA 2-45503	Stanford University	1326			
Brain serotonin and pituitary-adrenal function					
<i>Period</i>		<i>Obligations</i>			
07/01/74-06/30/75	FY75: \$15,000	TOTAL: \$15,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Barchas, J. D.	ARC/Zill, L. P.	53-Other Medical			
(21-970 970-21-16)					
NCA 2-45414	Stanford University	1320			
Efferent modulation of behavioral and neuronal habituation					
<i>Period</i>		<i>Obligations</i>			
01/01/74-12/31/75	FY75: \$9,350	TOTAL: \$9,350			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Pribram, K. H.	ARC/Zill, L. P.	53-Other Medical			
(21-970 970-21-11)					
NCA 2-45504	Stanford University	1327			
In vivo determination of zone properties from mechanical measurements					
<i>Period</i>		<i>Obligations</i>			
07/01/74-06/31/75	FY75: \$11,800	TOTAL: \$11,800			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Steele, C. R.	ARC/Zill, L. P.	53-Other Medical			
(21-970 970-21-14)					
NCA 2-45418	Stanford University	1321			
Development of a computer-based testing program for measurement of cognitive and perceptual skills					
<i>Period</i>		<i>Obligations</i>			
12/01/73-01/31/76	FY75: \$14,760	TOTAL: \$14,760			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Atkinson, R. C.	ARC/Zill, L. P.	53-Other Medical			
(21-970 970-21-51)					
NCA 2-45506	Stanford University	1328			
Quantum chemical calculations for prediction of mass spectra					
<i>Period</i>		<i>Obligations</i>			
08/01/74-07/31/75	FY75: \$6,500	TOTAL: \$6,500			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Loew, G. B.	ARC/Zill, L. P.	12-Chemistry			
(21-840 192-55-62)					
NCA 2-45425	Stanford University	1322			
Dynamic critical damping of capacitor discharge circuit					
<i>Period</i>		<i>Obligations</i>			
05/01/74-11/30/74	FY75: \$3,750	TOTAL: \$3,750			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Dutton, R. M.	ARC/Zill, L. P.	45-Elec Engr			
(21-704 506-00-00)	(21-704 506-26-21)				
NCA 2-45507	Stanford University	1329			
Rapid driver-gas injection in arc-driver of the east facility					
<i>Period</i>		<i>Obligations</i>			
07/15/74-09/15/74	FY75: \$2,124	TOTAL: \$2,124			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Baganoff, D.	ARC/Zill, L. P.	49-Engr, NEC			
(21-704 506-00-00)					

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NCA 2-45508	Stanford University	1330	NCA 2-45515	Stanford University	1337
Synoptic relations in the vestibulo-ocular system			Studies of compiler implementation		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
10/01/74-10/01/75	FY75: \$6,000	TOTAL: \$6,000	01/01/75-12/31/75	FY75: \$15,000	TOTAL: \$15,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Mathers, L.	ARC/Zill, L. P.	53-Other Medical	Bredt, T. H.	ARC/Zill, L. P.	21-Mathematics
(21-970 970-21-11)			(21-704 506-26-31)		
NCA 2-45509	Stanford University	1331	NCA 2-45516	Stanford University	1338
Effects of states of physical activity/inactivity on hormone receptor binding			Analysis of visual orientation and visual effort		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
10/01/74-08/31/75	FY75: \$14,185	TOTAL: \$14,185	01/01/75-12/31/75	FY75: \$16,000	TOTAL: \$16,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Reaven, G. M.	ARC/Zill, L. P.	53-Other Medical	Pribram, K. H.	ARC/Zill, L. P.	53-Other Medical
(21-970 970-21-14)			(21-970 970-21-51)		
NCA 2-45510	Stanford University	1332	NCA 2-45517	Stanford University	1339
Opportunities for radio science experiments with future NASA spacecraft			Infrared spectroscopy of water vapor at atmospheric and elevated temperatures		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
10/01/74-09/30/75	FY75: \$15,000	TOTAL: \$15,000	01/01/75-12/31/75	FY75: \$15,000	TOTAL: \$15,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Croft, T. A.	ARC/Zill, L. P.	42-Astro Engr	Mitchner, M.	ARC/Zill, L. P.	31-Atmos Sci
(21-030 997-00-00)	(21-850 385-00-00)		(21-704 506-26-21)		
NCA 2-45511	Stanford University	1333	NCA 2-45518	Stanford University	1340
Angstrom-particle catalysis			Study of filter mechanizations for video inertia pointing system microprocessor		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
10/01/74-09/30/75	FY75: \$6,005	TOTAL: \$6,005	04/15/75-09/30/75	FY75: \$7,500	TOTAL: \$7,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Pound, G. M.	ARC/Zill, L. P.	12-Chemistry	Powell, J. D.	ARC/Zill, L. P.	45-Elec Engr
(21-704 506-16-11)			(21-704 506-19-15)		
NCA 2-45512	Stanford University	1334	NCA 2-45519	Stanford University	1341
Joint use of specialized resources to support basic, exploratory and applied research in acoustics			New techniques for data analysis		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
11/01/74-10/31/75	FY75: \$53,984	TOTAL: \$53,984	04/01/75-03/31/76	FY75: \$8,600	TOTAL: \$8,600
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Karamcheti, K.	ARC/Zill, L. P.	41-Aero Engr	Petrosian, J.	ARC/Zill, L. P.	21-Mathematics
(21-030 997-00-00)	(21-702 505-00-00)		(21-840 185-47-67)	(21-850 352-02-03)	
NCA 2-45513	Stanford University	1335	NCA 2-45520	Stanford University	1342
Investigation of picture statistics and video compression techniques			Study of numerical methods for rotational flow		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
10/01/74-10/31/75	FY75: \$10,000	TOTAL: \$10,000	06/23/75-06/30/76	FY75: \$12,000	TOTAL: \$12,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Peterson, A. M.	ARC/Zill, L. P.	45-Elec Engr	Oliger, J.	ARC/Zill, L. P.	21-Mathematics
(21-620 650-60-10)			(21-704 502-07-01)		
NCA 2-45514	Stanford University	1336	NCA 2-45601	Stanford University	1343
Development of reflecting optics systems used in infrared astronomy			Development of a research model of the vertical motion simulator		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/01/75-05/31/75	FY75: \$2,078	TOTAL: \$2,078	07/01/75-06/30/76	FY75: \$10,326	TOTAL: \$10,326
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ritson, D.	ARC/Zill, L. P.	11-Astronomy	Debra, D. B.	ARC/Zill, L. P.	46-Mech Engr
(21-850 352-02-03)			(21-030 997-00-00)		

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NGL 05-020-007	Stanford University	1344	NGL 05-020-232	Stanford University	1350
Guidance and control of flight vehicles			Evaluation, and developmental studies of possible active seismic experiments during the post-Apollo period		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
08/17/72-10/15/77	FY75: \$60,000	TOTAL: \$1,225,064	06/16/67-06/30/74	FY75:	TOTAL: \$177,468
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bryson, A. E.	ARC/Doolin, B. F.	49-Engr, NEC	Kovach, R. L.	HQ-SM/Bryson, R. P.	39-Env Sci, NEC
Franklin, G. F.			HQ-SM/Allenby, R. J.		
(21-702 505-07-11)	(21-750 125-00-00)		(10-840 185-00-00)	(10-810 195-00-00)	
NGL 05-020-008	Stanford University	1345	NGL 05-020-242	Stanford University	1351
Investigation of experimental techniques for measurement of low frequency electromagnetic phenomena in the atmosphere			Research on the effects of structure upon the electronic behavior of materials		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
09/01/61-02/28/78	FY75: \$135,000	TOTAL: \$1,154,443	03/26/68-01/31/76	FY75:	TOTAL: \$160,129
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Helliwell, R. A.	HQ-SG/Berko, F. W.	13-Physics	Little, W. A.	HQ-RW/Weinberg, I.	13-Physics
	HQ-SG/Schmerling, E. R.		JPL/Rembaum, A.		
(10-850 188-36-57)	(10-850 385-36-00)		(10-704 502-01-02)		
NGL 05-020-014	Stanford University	1346	NGL 05-020-243	Stanford University	1352
Theoretical & experimental radio & radar studies of lunar, planetary ionospheres, atmospheres, & surfaces of sun & interplanetary medium			Refined methods of aeroelastic analysis and optimization		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
04/30/63-09/30/77	FY75: \$150,000	TOTAL: \$2,497,959	08/14/67-08/31/77	FY75: \$15,000	TOTAL: \$95,630
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Howard, H. T.	HQ-SL/Fellows, R. F.	31-Atmos Sci	Ashley, H.	LARC/Doggett, R. V., Jr.	41-Aero Engr
	HQ-SG/Schmerling, E. R.		(23-702 505-02-21)	(23-704 501-22-04)	(23-760 136-00-00)
(10-840 185-47-80)	(10-850 188-36-57)				
NGL 05-020-103	Stanford University	1347	NGL 05-020-272	Stanford University	1353
Investigation of laser dynamics, modulation and control by means of intra-cavity time varying perturbation			Theoretical study of the solar atmosphere and the structure of active regions		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/16/66-03/31/78	FY75: \$70,000	TOTAL: \$947,000	06/07/68-06/30/76	FY75: \$37,500	TOTAL: \$635,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harris, S. E.	HQ-RE/Catoe, C. E.	45-Elec Engr	Sturrock, P. A.	HQ-SG/Timothy, A. F.	13-Physics
Siegmán, A. E.	GSFC/McAvoy, N.		HQ-SG/Jordan, S. D.		
(10-704 506-20-31)	(10-704 502-03-12)		(10-850 188-38-53)		
NGL 05-020-134	Stanford University	1348	NGL 05-020-305	Stanford University	1354
Mass transfer to a turbulent boundary layer with step changes in boundary conditions and variable free-stream velocity			Evaluation of the cardiovascular system during various circulatory stresses		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
02/24/66-12/01/74	FY75:	TOTAL: \$251,220	09/17/68-09/01/77	FY75: \$130,000	TOTAL: \$946,032
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kays, W. M.	LERC/Graham, R. W.	46-Mech Engr	Harrison, D. C.	ARC/Sandler, H.	52-Clinical Med
Moffat, R. J.			(21-970 970-21-12)	(21-980 975-00-00)	
(22-704 501-24-07)	(22-762 132-00-00)				
NGL 05-020-176	Stanford University	1349	NGL 05-020-397	Stanford University	1355
Investigation of space-related whistler propagation phenomena in laboratory plasmas			Dynamics of mechanical systems coupled to energy sources		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
03/02/67-06/30/77	FY75: \$100,000	TOTAL: \$799,800	02/04/70-03/31/76	FY75:	TOTAL: \$40,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Crawford, F. W.	HQ-SG/Berko, F. W.	13-Physics	Herrmann, G.	LARC/Reed, W. H., III	41-Aero Engr
	HQ-SG/Schmerling, E. R.		(23-760 126-00-00)		
(10-850 188-36-57)	(10-850 188-00-00)				
NGL 05-020-498	Stanford University	1356	NGL 05-020-498	Stanford University	1356
Modal suppression to flutter control			Modal suppression to flutter control		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
04/01/71-04/01/77	FY75:	TOTAL: \$120,000	04/01/71-04/01/77	FY75:	TOTAL: \$120,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McIntosh, S. C., Jr.	FRC/Kordes, E. E.	41-Aero Engr	McIntosh, S. C., Jr.	FRC/Kordes, E. E.	41-Aero Engr
(24-760 126-00-00)			(24-760 126-00-00)		

**NASA'S UNIVERSITY PROGRAM
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NSG 4002 **Stanford University** **1398**
Theoretical and experimental investigations in the control of aircraft
Period *Obligations*
09/01/74-08/31/77 **FY75: \$120,000** **TOTAL: \$120,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Debra, D. B. **FRC/Deets, D. A.** **41-Aero Engr**
Powell, J. D. **FRC/Kordes, E. E.**
(24-702 505-06-91) (24-702 512-53-03)

NSG 5024 **Stanford University** **1399**
Relation of the observed far ultraviolet solar irradiance to the solar magnetic sector structure
Period *Obligations*
09/01/74-09/30/75 **FY75: \$30,000** **TOTAL: \$30,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wilcox, J. M. **GSFC/Heath, D. F.** **31-Atmos Sci**
(51-680 175-61-42)

NSG 5050 **Stanford University** **1400**
Field measurements for heat capacity mapping
Period *Obligations*
03/01/75-02/29/76 **FY75: \$39,795** **TOTAL: \$39,795**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lyon, R. J. **GSFC/Schutt, J. B.** **32-Geological/Sci**
(51-680 176-52-41) (51-680 176-62-41) (51-680 177-11-41)

NSG 7029 **Stanford University** **1401**
Radar data from the moon
Period *Obligations*
04/01/74-09/30/75 **FY75: \$49,302** **TOTAL: \$121,545**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tyler, G. L. **HQ-SM/Bryson, R. P.** **32-Geological Sci**
Howard, H. T. **HQ-SM/Roberson, F. I.**
Simpson, R. A.
(10-810 383-20-03)

NSG 7042 **Stanford University** **1402**
Modulate the energy of an electron beam with a laser
Period *Obligations*
05/01/74-01/31/75 **FY75: \$14,550** **TOTAL: \$14,550**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pantell, R. H. **HQ-RR/Thom, K.** **13-Physics**
(10-704 502-10-01)

NSG 7092 **Stanford University** **1403**
Energy release in solar flares based on OSO-5 data
Period *Obligations*
10/01/74-09/30/75 **FY75: \$50,000** **TOTAL: \$50,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sturrock, P. A. **HQ-SG/Jordan, S. D.** **11-Astronomy**
HQ-SG/Timothy, A. F.
(10-850 385-38-00)

NSG 7099 **Stanford University** **1404**
Structure and energy balance of coronal active regions
Period *Obligations*
10/29/74-09/30/75 **FY75: \$55,500** **TOTAL: \$55,500**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Walker, A. B. **HQ-SG/Jordan, S. D.** **11-Astronomy**
HQ-SG/Timothy, A. F.
(10-850 385-38-00)

NSG 7110 **Stanford University** **1405**
Investigation of laser particle accelerators
Period *Obligations*
02/06/75-12/31/75 **FY75: \$50,000** **TOTAL: \$50,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Unavailable **HQ-RR/Thom, K.** **13-Physics**
(10-704 506-25-31)

NSG 7117 **Stanford University** **1406**
A study of seismic velocity electrical conductivity and the state of the lunar crust
Period *Obligations*
03/01/75-02/29/76 **FY75: \$46,552** **TOTAL: \$46,552**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Nur, A. M. **HQ-SM/Bryson, R. P.** **32-Geological Sci**
HQ-SM/Roberson, F. I.
(10-810 195-20-03)

NAS 2-7879 **University of California - Berkeley** **1407**
Study of supply and demand equilibrium in short haul air transportation
Period *Obligations*
05/01/74-10/31/75 **FY75: \$30,000** **TOTAL: \$30,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Horonjeff, R. **ARC/Kenyon, G. C.** **75-Political Sci**
Kanafani, A. **ARC/Galloway, T. L.**
(15-701 791-93-03)

NAS 2-8288 **University of California - Berkeley** **1408**
Fire protection coating for spray-on polyurethane foam
Period *Obligations*
06/05/74-09/30/75 **FY75: \$7,700** **TOTAL: \$12,700**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Williamson, R. B. **ARC/Riccitiello, S. R.** **49-Engr, NEC**
(21-702 505-01-32) (21-704 501-31-90)

NAS 5-20079 **University of California - Berkeley** **1409**
Energetic particles flux experiment for International Sun-Earth Explorer mother & daughter spacecraft
Period *Obligations*
05/23/74-10/31/79 **FY75: \$399,000** **TOTAL: \$423,152**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Anderson, K. A. **GSFC/Davis, M. A.** **13-Physics**
(51-850 862-12-00)

NAS 5-20080 **University of California - Berkeley** **1410**
Quasi-electric fields experiment for ISEE mother/daughter spacecraft
Period *Obligations*
05/21/74-10/31/79 **FY75: \$194,000** **TOTAL: \$216,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mozer, F. S. **GSFC/Davis, M. A.** **13-Physics**
Kelley, M. C. **(51-850 862-12-00)** **(51-850 861-00-00)**

NAS 5-20838 **University of California - Berkeley** **1411**
Data reduction and analysis of data from IMP I solar particle experiment
Period *Obligations*
02/19/75-12/31/75 **FY75: \$55,700** **TOTAL: \$55,700**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Anderson, K. A. **GSFC/Davis, M. A.** **13-Physics**
(51-850 861-52-00)

**NASA'S UNIVERSITY PROGRAM
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NAS 5-20969 University of California - Berkeley 1412
ERTS data follow-on investigation
Period *Obligations*
04/15/75-07/15/76 FY75: \$80,000 TOTAL: \$80,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Colwell, R. N. GSFC/Stonesifer, G.R. 32-Geological Sci
(51-680 641-15-00)

NAS 5-20995 University of California - Berkeley 1413
Isotopic composition of primary cosmic rays H thru FE for ISEE
C spacecraft
Period *Obligations*
03/19/75-07/30/80 FY75: \$90,000 TOTAL: \$90,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Heckman, H. H. GSFC/Gallagher, W. F. 13-Physics
Greiner, D. E.
(51-850 862-12-00)

NAS 5-21827 University of California - Berkeley 1414
ERTS-A data user investigations of California resources
Period *Obligations*
08/29/72-11/01/74 FY75: TOTAL: \$486,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Colwell, R. N. GSFC/Crump, E. W. 39-Env Sci, NEC
(51-680 641-14-01) (51-680 641-14-07)

NAS 5-22307 University of California - Berkeley 1415
Solar X-ray and interplanetary and solar electrons for the ISEE-C
spacecraft
Period *Obligations*
04/11/75-06/01/77 FY75: \$30,000 TOTAL: \$30,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Anderson, K. A. GSFC/Gallagher, W. F. 32-Geological Sci
(51-850 862-12-00)

NAS 8-29603 University of California - Berkeley 1416
Trans-uranic cosmic ray flight experiment
Period *Obligations*
03/13/73-06/30/75 FY75: \$5,000 TOTAL: \$184,738
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Price, P. B. MSFC/Ondrak, B. T. 13-Physics
(62-960 948-80-82)

NAS 8-31346 University of California - Berkeley 1417
Feasibility of coherent and incoherent backscatter experiments
from the AMPS laboratory
Period *Obligations*
03/01/75-12/21/76 FY75: \$30,000 TOTAL: \$30,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mozer, F. S. MSFC/Roberts, W. T. 19-Phys Sci, NEC
(62-850 356-36-03)

NAS 9-7801 University of California - Berkeley 1418
High Altitude Particle Physics Experiment (HAPPE) program
Period *Obligations*
03/18/68-07/31/75 FY75: TOTAL: \$4,781,386
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Alvarez, L. W. JSC/Golden, R. L. 31-Atmos Sci
(72-850 832-12-00) (72-850 188-00-00)

NAS 9-13799 University of California - Berkeley 1419
Search for extreme ultraviolet radiation from celestial observations
on the Apollo-Soyuz spacecraft
Period *Obligations*
08/01/73-07/10/76 FY75: \$375,779 TOTAL: \$1,107,779
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bowyer, C. S. JSC/Sanders, J. M. 11-Astronomy
JSC/Baldwin, R. R.
(72-930 966-30-00)

NAS 9-13807 University of California - Berkeley 1420
Measure the intensity of the interplanetary helium glow from
Apollo-Soyuz spacecraft
Period *Obligations*
08/01/73-07/10/76 FY75: \$390,293 TOTAL: \$1,052,893
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bowyer, C. S. JSC/Sanders, J. M. 11-Astronomy
(72-930 966-30-00)

NAS 9-14419 University of California - Berkeley 1421
Agriculture interpretative technique development using Skylab/
EREP data
Period *Obligations*
10/01/74-06/30/76 FY75: \$48,460 TOTAL: \$48,460
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Colwell, R. N. JSC/Forbes, C. D. 39-Env Sci, NEC
(72-680 652-01-82)

NAS 9-14420 University of California - Berkeley 1422
An integrated study of earth resources in the State of California
Period *Obligations*
10/01/74-07/15/75 FY75: \$44,000 TOTAL: \$44,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Colwell, R. N. JSC/Forbes, C. D. 39-Env Sci, NEC
(72-680 652-01-85)

NAS 9-14452 University of California - Berkeley 1423
Forestry applications research on timber resources
Period *Obligations*
11/15/74-11/15/75 FY75: \$98,775 TOTAL: \$98,775
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lauer, D. JSC/Erb, R. B. 39-Env Sci, NEC
Nichols, J. D. JSC/Weitz, P. J.
(72-680 177-51-81)

NAS 9-14565 University of California - Berkeley 1424
Study development of improved photointerpretative techniques
to wheat identification
Period *Obligations*
05/15/75-05/30/76 FY75: \$180,000 TOTAL: \$180,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Nichols, J. D. JSC/Dietrich, J. W. 39-Env Sci, NEC
JSC/Potter, A. E.
(72-680 658-10-20)

NCA 2-50302 University of California - Berkeley 1425
Use of campus facilities
Period *Obligations*
07/01/72-06/30/75 FY75: \$31,920 TOTAL: \$31,920
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sherman, F. S. ARC/Zill, L. P. 32-Geological Sci
(21-702 760-16-00)

**NASA'S UNIVERSITY PROGRAM
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NGL 05-003-404 University of California - Berkeley 1439
Integrated study of earth resources in the State of California
using remote sensing techniques

<i>Period</i>	<i>Obligations</i>
07/13/70-04/30/78	FY75: \$500,000 TOTAL: \$3,500,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Colewell, R. N.	HQ-EP/Pinkler, D. G. 39-Env Sci, NEC
(10-371 340-00-00)	(10-680 177-54-14)

NGL 05-003-409 University of California - Berkeley 1440
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>
01/26/71-01/31/78	FY75: \$191,313 TOTAL: \$530,413
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Reynolds, J. H.	JSC/Harris, J. W. 13-Physics
(72-810 388-10-02)	

NGL 05-003-410 University of California - Berkeley 1441
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>
02/22/71-01/31/78	FY75: \$117,635 TOTAL: \$604,795
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Price, P. B.	JSC/Harris, J. W. 12-Chemistry
(72-810 388-10-03)	(72-910 914-40-00)

NGL 05-003-497 University of California - Berkeley 1442
Research in space sciences

<i>Period</i>	<i>Obligations</i>
04/05/72-03/31/78	FY75: \$200,000 TOTAL: \$800,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Anderson, K. A.	HQ-P/Redding, E. R. 99-Multi-Discip
(10-371 340-00-00)	

NGR 05-003-239 University of California - Berkeley 1443
Auroral zone rocket studies of electric fields and precipitating
particles

<i>Period</i>	<i>Obligations</i>
08/26/68-09/30/75	FY75: \$120,000 TOTAL: \$635,811
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Mozer, F. S.	HQ-SG/Berko, F. W. 13-Physics
(10-850 879-11-00)	HQ-SG/Ott, E. J.

NGR 05-003-309 University of California - Berkeley 1444
Non-gravitational forces of periodic comets

<i>Period</i>	<i>Obligations</i>
10/20/70-06/30/75	FY75: TOTAL: \$20,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Cunningham, L. E.	HQ-SG/Dubin, M. 31-Atmos Sci
(10-850 188-00-00)	

NGR 05-003-376 University of California - Berkeley 1445
High resolution studies of cosmic rays and solar particles

<i>Period</i>	<i>Obligations</i>
04/16/71-09/30/77	FY75: \$57,000 TOTAL: \$310,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Price, P. B.	HQ-SG/Lazarus, A. J. 11-Astronomy
(10-850 879-11-00)	HQ-SG/Opp, A. G. (10-850 879-00-00)

NGR 05-003-406 University of California - Berkeley 1446
Lunar soil properties and soil mechanics

<i>Period</i>	<i>Obligations</i>
06/09/70-12/31/73	FY75: TOTAL: \$125,510
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Mitchell, J. K.	HQ-SM/Bryson, R. P. 32-Geological Sci
(10-810 195-00-00)	(10-910 914-41-00)

NGR 05-003-432 University of California - Berkeley 1447
Airborne far infrared astronomy

<i>Period</i>	<i>Obligations</i>
05/10/71-03/01/76	FY75: \$25,000 TOTAL: \$129,121
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Townes, C. H.	ARC/Cameron, R. M. 11-Astronomy
(21-850 352-02-01)	ARC/Mason, R. H.

NGR 05-003-435 University of California - Berkeley 1448
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>
04/01/71-01/31/77	FY75: \$67,000 TOTAL: \$1,184,800
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Burlingame, A. L.	JSC/Harris, J. W. 13-Physics
(72-810 388-10-02)	(72-910 914-40-00)

NGR 05-003-450 University of California - Berkeley 1449
Study of X-ray emission from galactic and extragalactic sources
with emphasis on soft and ultra-soft wavelengths

<i>Period</i>	<i>Obligations</i>
05/28/71-10/30/75	FY75: \$70,315 TOTAL: \$610,864
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Bowyer, C. S.	HQ-SG/Lazarus, A. J. 11-Astronomy
(10-850 879-11-00)	HQ-SG/Opp, A. G.

NGR 05-003-451 University of California - Berkeley 1450
Research in aeronautics & air transportation

<i>Period</i>	<i>Obligations</i>
03/30/71-03/14/77	FY75: \$140,653 TOTAL: \$397,393
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Holt, M.	ARC/Chapman, G. T. 41-Aero Engr
Sherman, F. S.	ARC/Pfyl, F. A.
Talbot, L.	
(21-702 505-04-11)	(21-702 505-05-41) (21-702 505-10-12)

NGR 05-003-452 University of California - Berkeley 1451
Infrared spectra of planetary atmospheres

<i>Period</i>	<i>Obligations</i>
02/18/72-06/30/76	FY75: \$92,276 TOTAL: \$168,020
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Townes, C. H.	HQ-SL/Brunk, W. E. 11-Astronomy
(10-840 196-41-80)	HQ-SL/Fellows, R. F. (10-840 196-00-00)

NGR 05-003-460 University of California - Berkeley 1452
The chemistry of living systems

<i>Period</i>	<i>Obligations</i>
07/21/71-07/31/76	FY75: \$75,000 TOTAL: \$325,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Jukes, J. H.	HQ-SL/Young, R. S. 12-Chemistry
(10-840 192-55-61)	

**NASA'S UNIVERSITY PROGRAM
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NGR 05-003-470	University of California - Berkeley	1453	Invivo measurement of human body measurements		
<i>Period</i>	<i>Obligations</i>				
05/11/72-12/31/75	FY75: \$90,000	TOTAL: \$266,508			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Pace, N.	ARC/Newsom, B. D.	59-Life Sci, NEC			
	ARC/Sandler, H.				
(21-970 970-21-14)	(21-970 970-21-00)				
NGR 05-003-471	University of California - Berkeley	1454	Sociopolitical assessment of advanced technology		
<i>Period</i>	<i>Obligations</i>				
05/21/71-08/31/76	FY75: \$24,968	TOTAL: \$260,769			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
La Porte, T. R.	ARC/Tanner, T. A.	79-Soc Sci, NEC			
(21-704 504-09-12)	(21-704 501-16-00)				
NGR 05-003-480	University of California - Berkeley	1455	Continued reduction and analysis of data obtained by an experiment on ATS-5		
<i>Period</i>	<i>Obligations</i>				
04/01/72-09/30/74	FY75:	TOTAL: \$80,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Mozer, F. S.	HQ-SG/Kavanagh, L. D., Jr.	13-Physics			
(10-850 385-36-00)	(10-850 385-00-00)				
NGR 05-003-510	University of California - Berkeley	1456	OGO-5 solar X-ray measurements and related solar flare emissions		
<i>Period</i>	<i>Obligations</i>				
11/17/72-06/30/76	FY75:	TOTAL: \$45,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Anderson, K. A.	HQ-SG/Oertel, G. K.	11-Astronomy			
	HQ-SG/Weldon, J. M.				
(10-850 385-38-00)					
NGR 05-003-511	University of California - Berkeley	1457	Spectrographic observation of infrared lines		
<i>Period</i>	<i>Obligations</i>				
03/01/73-09/01/75	FY75: \$35,005	TOTAL: \$105,005			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Townes, C. H.	ARC/Cameron, R. M.	11-Astronomy			
	ARC/Gillespie, C. M., Jr.				
(21-850 352-02-03)					
NGR 05-003-513	University of California - Berkeley	1458	Heavy ion fragment experiments at the bevatron		
<i>Period</i>	<i>Obligations</i>				
10/01/73-09/30/75	FY75: \$120,000	TOTAL: \$255,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Heckman, H. H.	HQ-SG/Lazarus, A. J.	11-Astronomy			
	HQ-SG/Opp, A. G.				
(10-850 188-46-56)					
NGR 05-003-553	University of California - Berkeley	1459	High energy primary cosmic radiation measured by superconducting magnetic spectrometer		
<i>Period</i>	<i>Obligations</i>				
05/10/73-06/30/75	FY75: \$125,082	TOTAL: \$675,082			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Alvarez, L. W.	HQ-SG/Lazarus, A. J.	11-Astronomy			
	HQ-SG/Opp, A. G.				
(10-850 188-46-56)	(10-850 188-00-00)				
NGR 05-003-559	University of California - Berkeley	1460	Metal barrier metal optical diodes		
<i>Period</i>	<i>Obligations</i>				
03/19/73-05/01/76	FY75: \$34,500	TOTAL: \$108,024			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Gustafson, T. K.	ARC/Billman, K. W.	45-Elec Engr			
	ARC/Hansen, C. F.				
(21-704 506-25-32)	(21-704 506-25-61)				
NGR 05-003-562	University of California - Berkeley	1461	Research on iron base alloys with superior strength and fracture toughness for use at cryogenic temperatures		
<i>Period</i>	<i>Obligations</i>				
08/15/73-10/15/76	FY75: \$31,263	TOTAL: \$61,263			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Morris, J. W.	LERC/Stephens, J. R.	47-Materials Engr			
Zackay, V. F.					
Parker, E. R.					
(22-704 506-16-21)	(22-704 502-21-20)				
NGR 05-003-578	University of California - Berkeley	1462	Theoretical X-ray and gamma-ray astronomy		
<i>Period</i>	<i>Obligations</i>				
08/01/73-07/31/75	FY75: \$31,686	TOTAL: \$61,544			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Silk, J. I.	HQ-SG/Rosendhal, J. D.	11-Astronomy			
	HQ-SG/Roman, N. G.				
(10-850 188-41-51)	(10-850 188-00-00)				
NGR 05-003-587	University of California - Berkeley	1463	Investigation of strong features in the spectrum of Procyon		
<i>Period</i>	<i>Obligations</i>				
12/01/73-05/30/75	FY75:	TOTAL: \$1,015			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Spinrad, H.	GSFC/Kupperian, J. E.	11-Astronomy			
(51-850 831-43-00)					
NSG 2003	University of California - Berkeley	1464	Remote sensing and large-scale movements of nuisance algal blooms in eutrophic water bodies		
<i>Period</i>	<i>Obligations</i>				
01/15/74-01/14/76	FY75: \$27,282	TOTAL: \$44,503			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Horne, A. J.	ARC/Wrigley, R. C.	39-Env Sci, NEC			
(21-680 176-53-12)	(21-680 176-13-11)	(21-680 176-53-11)			
NSG 2026	University of California - Berkeley	1465	Fire testing of aircraft interiors		
<i>Period</i>	<i>Obligations</i>				
05/01/74-11/30/75	FY75: \$90,000	TOTAL: \$150,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Williamson, R. B.	ARC/Kourtidis, D. A.	44-Civil Engr			
	ARC/Fish, R. H.				
(21-704 501-21-22)	(21-702 505-08-21)				
NSG 2043	University of California - Berkeley	1466	Preparation of composite reverse osmosis membranes by plasma polymerization		
<i>Period</i>	<i>Obligations</i>				
10/01/74-10/01/75	FY75: \$15,000	TOTAL: \$15,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Bell, A. T.	ARC/Wydeven, T. J.	43-Chem Engr			
Kanafani, A.	ARC/Burrous, C. N.				
(21-970 970-22-21)	(21-970 970-22-23)				

**NASA'S UNIVERSITY PROGRAM
CALIFORNIA (Continued)**

NSG 2046 University of California - Berkeley 1467
Effect of microwave instrument landing system on runway capacity
Period *Obligations*
09/09/74-09/30/75 FY75: \$18,717 TOTAL: \$18,717
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Horonjeff, R. ARC/Kenyon, G. C. 41-Aero Engr
(21-702 513-50-53)

NSG 2084 University of California - Berkeley 1468
Study of the thermal degradation of polymers under laser simulated environments
Period *Obligations*
06/09/75-06/08/76 FY75: \$23,181 TOTAL: \$23,181
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Williamson, R. B. ARC/Riccitiello, S. R. 12-Chemistry
Lopata, E. S. ARC/Parker, J. A.
(21-702 505-01-32)

NSG 3028 University of California - Berkeley 1469
Techniques for stabilization of lean combustion systems
Period *Obligations*
07/01/74-07/31/76 FY75: TOTAL: \$72,380
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Steele, C. R. LERC/Marek, C. J. 46-Mech Engr
Oppenheim, A. K. LERC/Grobman, J. S.
Sawyer, R. F.
(22-704 501-24-02)

NSG 5057 University of California - Berkeley 1470
X-ray observations of lacertids from OAO Copernicus
Period *Obligations*
03/01/75-02/29/76 FY75: \$8,505 TOTAL: \$8,505
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bowyer, C. S. GSFC/Kupperian, J. E. 11-Astronomy
(51-850 831-42-00)

NSG 7127 University of California - Berkeley 1471
Map lunar surface remanent magentic fields and to develop the theory of solar winds cavity
Period *Obligations*
03/25/75-02/28/76 FY75: \$50,000 TOTAL: \$50,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Unavailable HQ-SM/Bryson, R. P. 39-Env Sci, NEC
(10-810 383-20-03)

NSG 7139 University of California - Berkeley 1472
Pulse resolved spectrophotometry of Hz Herculis
Period *Obligations*
05/01/75-04/30/76 FY75: \$4,340 TOTAL: \$4,340
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bowyer, C. S. HQ-SG/Rosendhal, J. D. 11-Astronomy
HQ-SG/Roman, N. G.
(10-850 188-41-51)

NAS 2-7519 University of California - Davis 1473
Biotelemetry from instrumented simians
Period *Obligations*
04/10/73-12/31/74 FY75: TOTAL: \$13,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Chapman, L. F. ARC/Winget, C. M. 53-Other Medical
ARC/Danellis, J. V.
(21-970 970-00-00)

NAS 2-8685 University of California - Davis 1474
Study on amino acid metabolism in higher plants
Period *Obligations*
01/22/75-01/21/76 FY75: \$25,000 TOTAL: \$25,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mazelis, M. ARC/Taketa, S. T. 51-Biology
(21-970 970-21-61)

NAS 9-13589 University of California - Davis 1475
Study of bone mineral measurement. Medical experiment MO78
Period *Obligations*
07/02/73-07/31/75 FY75: \$11,165 TOTAL: \$131,165
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Vogel, J. M. JSC/Smith, M. C., Jr. 52-Clinical Med
(72-960 948-60-91) (72-960 948-00-00)

NCA 2-80401 University of California - Davis 1476
Human performance under selected environmental stresses
Period *Obligations*
09/01/73-12/31/74 FY75: \$2,500 TOTAL: \$2,500
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Berauer, E. D. ARC/Zill, L. P. 52-Clinical Med
(21-970 970-21-14)

NCA 2-80501 University of California - Davis 1477
Relationships between endocrine, physiological and metabolic changes during bedrest
Period *Obligations*
01/01/75-12/31/75 FY75: \$12,000 TOTAL: \$12,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Baldwin, R. L. ARC/Zill, L. P. 53-Other Medical
(21-970 970-21-14)

NCA 2-80502 University of California - Davis 1478
Development of a computer program based on the empirical pseudo-potential method
Period *Obligations*
04/01/75-03/31/76 FY75: \$4,958 TOTAL: \$4,958
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Fong, C. Y. ARC/Zill, L. P. 21-Mathematics
(21-704 506-16-12)

NCA 2-80503 University of California - Davis 1479
Low density experimental threshold determination
Period *Obligations*
06/01/75-05/30/76 FY75: \$4,500 TOTAL: \$4,500
Prin. Invest. *NASA Tech. Officer* *CASE Category*
White, B. R. ARC/Zill, L. P. 41-Aero Engr
(21-840 185-50-60)

NCA 2-80504 University of California - Davis 1480
Analysis of EEG and other physiological data
Period *Obligations*
01/01/75-12/31/75 FY75: \$13,000 TOTAL: \$13,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Chapman, L. F. ARC/Zill, L. P. 61-Biol Aspects
(21-970 970-21-61) (21-970 970-21-14) (21-970 970-21-52)

**NASA'S UNIVERSITY PROGRAM
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NCA 2-80505 University of California - Davis 1481
 Blood protein and red cell turnover rate studies in dogs
Period *Obligations*
 05/01/75-01/01/76 FY75: \$6,000 TOTAL: \$6,000
Prin. Invest. NASA Tech. Officer CASE Category
 Evans, J. W. ARC/Zill, L. P. 51-Biology
 (21-970 970-21-61)

NCA 2-80506 University of California - Davis 1482
 Human performance under selected environmental stresses
Period *Obligations*
 05/15/75-12/31/75 FY75: \$10,000 TOTAL: \$10,000
Prin. Invest. NASA Tech. Officer CASE Category
 Bernauer, E. M. ARC/Zill, L. P. 61-Biol Aspects
 (21-970 970-21-14)

NGL 05-004-008 University of California - Davis 1483
 Physiological effects of chronic acceleration
Period *Obligations*
 03/01/65-02/01/78 FY75: \$39,990 TOTAL: \$780,797
Prin. Invest. NASA Tech. Officer CASE Category
 Smith, A. H. ARC/Oyama, J. 51-Biology
 (21-970 970-21-61) (10-870 189-00-00)

NGR 05-004-006 University of California - Davis 1484
 Self-consistent study of trapped radiation in the geomagnetic field
Period *Obligations*
 02/01/66-02/01/77 FY75: TOTAL: \$19,177
Prin. Invest. NASA Tech. Officer CASE Category
 McIlwain, C. E. HQ-SG/Mead, G. 32-Geological Sci
 (51-850 188-00-00)

NGR 05-004-074 University of California - Davis 1485
 High pressure Hugoniot measurements on lunar rocks collected on Apollo missions
Period *Obligations*
 06/12/70-03/31/74 FY75: TOTAL: \$21,272
Prin. Invest. NASA Tech. Officer CASE Category
 Borg, R. J. HQ-SM/Bryson, R. P. 32-Geological Sci
 HQ-SM/Allenby, R. J.
 (10-810 195-00-00)

NGR 05-004-099 University of California - Davis 1486
 Investigation of the affect of altered gravity on temperature regulation in mammals
Period *Obligations*
 11/20/73-11/20/75 FY75: \$14,999 TOTAL: \$29,999
Prin. Invest. NASA Tech. Officer CASE Category
 Horowitz, J. M. ARC/Holton, E. M. 51-Biology
 Horowitz, B. A.
 (21-970 970-21-61) (53-970 970-71-61)

NGR 05-041-012 University of California - Irvine 1487
 Diagnosis of preclinical viral illness and prophylaxis against viral disease
Period *Obligations*
 07/13/71-12/01/75 FY75: \$38,650 TOTAL: \$139,342
Prin. Invest. NASA Tech. Officer CASE Category
 Tilles, J. G. ARC/Mandel, A. D. 52-Clinical Med
 (21-970 970-21-25) (21-704 501-31-90)

NAS 2-7251 University of California - Los Angeles 1488
 Pioneer F/G data analysis
Period *Obligations*
 10/13/72-06/30/75 FY75: \$75,000 TOTAL: \$189,670
Prin. Invest. NASA Tech. Officer CASE Category
 Coleman, P. J., Jr. ARC/Hall, C. F. 11-Astronomy
 ARC/Porter, D. L.
 (21-840 811-22-00)

NAS 2-7440 University of California - Los Angeles 1489
 Stable isotope ratio measurements
Period *Obligations*
 02/28/73-12/31/75 FY75: \$17,429 TOTAL: \$37,913
Prin. Invest. NASA Tech. Officer CASE Category
 Kaplan, I. R. ARC/Chang, S. 12-Chemistry
 (21-910 914-40-00) (21-810 388-10-02) (21-840 192-55-62)

NAS 2-7785 University of California - Los Angeles 1490
 Computer studies
Period *Obligations*
 09/13/73-08/20/75 FY75: \$64,000 TOTAL: \$71,500
Prin. Invest. NASA Tech. Officer CASE Category
 Britt, P. ARC/Polentz, P. P. 41-Aero Engr
 ARC/Erickson, L. L.
 (21-030 997-00-00) (21-702 743-00-00)

NAS 2-8454 University of California - Los Angeles 1491
 Computer time
Period *Obligations*
 08/01/74-07/31/75 FY75: \$21,000 TOTAL: \$21,000
Prin. Invest. NASA Tech. Officer CASE Category
 Unavailable ARC/Pucine, E. R. 21-Mathematics
 ARC/Rogallo, S. J.
 (21-030 997-00-00)

NAS 2-8646 University of California - Los Angeles 1492
 Study of chronobiology of pocket mice
Period *Obligations*
 12/01/74-08/01/75 FY75: \$42,301 TOTAL: \$42,301
Prin. Invest. NASA Tech. Officer CASE Category
 Lindberg, R. G. ARC/Tremor, J. W. 51-Biology
 (21-970 970-24-02)

NAS 2-8808 University of California - Los Angeles 1493
 Pioneer-Venus magnetometer
Period *Obligations*
 03/04/75-08/31/78 FY75: \$35,000 TOTAL: \$35,000
Prin. Invest. NASA Tech. Officer CASE Category
 Russell, C. T. ARC/Hall, C. F. 19-Phys Sci, NEC
 Snare, R. C. ARC/Sinnott, D. B.
 (21-840 825-20-00)

NAS 4-1995 University of California - Los Angeles 1494
 UCLA computer time
Period *Obligations*
 05/24/73-06/30/74 FY75: TOTAL: \$35,000
Prin. Invest. NASA Tech. Officer CASE Category
 Unavailable FRC/Carter, A. L. 41-Aero Engr
 (24-702 766-72-01) (24-704 501-22-01) (24-702 766-00-00)

**NASA'S UNIVERSITY PROGRAM
CALIFORNIA (Continued)**

NAS 4-2196 University of California - Los Angeles 1495
Computer time
Period *Obligations*
09/04/74-07/31/75 FY75: \$8,000 TOTAL: \$8,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Unavailable FRC/Matranga, G. J. 41-Aero Engr
(24-702 516-51-01)

NAS 5-11674 University of California - Los Angeles 1496
Magnetometer experiment for the ATS-F
Period *Obligations*
04/29/69-04/30/76 FY75: \$90,000 TOTAL: \$497,500
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Coleman, P. J., Jr. GSFC/Wales, R. O. 32-Geological Sci
(51-850 385-36-00) (51-620 630-22-00)

NAS 5-20064 University of California - Los Angeles 1497
Magnetic field investigation for ISEE mother/ daughter spacecraft
Period *Obligations*
06/05/74-10/31/79 FY75: \$289,388 TOTAL: \$309,006
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Russell, C. T. GSFC/Davis, M. A. 13-Physics
McPherron, R. L. (51-850 862-12-00) (51-850 861-00-00)

NAS 5-21968 University of California - Los Angeles 1498
Report of proceedings of International Conference on Radiation and Remote Probing of Atmosphere
Period *Obligations*
08/29/73-12/30/73 FY75: TOTAL: \$5,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kuriyan, J. G. GSFC/Bandeen, W. R. 31-Atmos Sci
(51-680 160-00-00)

NAS 6-2463 University of California - Los Angeles 1499
GEOS-C research into tectonics of ocean regions
Period *Obligations*
04/18/74-04/17/76 FY75: \$52,000 TOTAL: \$73,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kaula, W. M. WFC/Stanley, H. R. 33-Oceanography
Lingenfelter, R. E. WFC/Rossi, L. C.
Schubert, G. (53-630 369-07-01)

NAS 8-28310 University of California - Los Angeles 1500
Metal and halide eutectics, Skylab experiment
Period *Obligations*
11/02/72-06/30/75 FY75: \$15,000 TOTAL: \$49,967
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Yue, A. S. MSFC/Adams, W. R. 19-Phys Sci, NEC
MSFC/Aldrich, B. R.
(62-960 948-90-95)

NAS 8-28358 University of California - Los Angeles 1501
Study of control systems for advanced space vehicles
Period *Obligations*
02/15/72-10/31/75 FY75: \$5,000 TOTAL: \$71,818
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Likins, P. W. MSFC/Seltzer, S. M. 49-Engr, NEC
MSFC/Nurre, G. S.
(62-850 188-78-57)

NAS 8-29854 University of California - Los Angeles 1502
Directional solidification of eutectic composites in space
Period *Obligations*
08/07/73-04/30/75 FY75: TOTAL: \$23,645
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Yue, A. S. MSFC/Johnston, M. H. 12-Chemistry
MSFC/Griner, C. S.
(62-980 975-90-95)

NAS 8-30579 University of California - Los Angeles 1503
Zero solidification of a sodium chloride-lithium fluoride eutectic mixture
Period *Obligations*
01/11/74-03/31/76 FY75: TOTAL: \$54,700
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Yue, A. S. MSFC/Adams, W. R. 19-Phys Sci, NEC
MSFC/Boese, A.
(62-930 966-30-00)

NAS 9-12757 University of California - Los Angeles 1504
Lunar photo and altimetry analysis
Period *Obligations*
05/08/72-10/01/75 FY75: TOTAL: \$90,419
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ukanwa, A. O. JSC/Hardee, S. N. 13-Physics
(72-810 383-30-02)

NCA 2-90402 University of California - Los Angeles 1505
In-situ high-temperature controlled-atmosphere electron microscopy to study nuclei formation
Period *Obligations*
10/01/73-10/01/75 FY75: \$7,000 TOTAL: \$7,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Douglass, D. L. ARC/Zill, L. P. 12-Chemistry
(21-704 506-16-11)

NCA 2-90405 University of California - Los Angeles 1506
Automated structural design
Period *Obligations*
01/01/74-09/01/75 FY75: \$10,000 TOTAL: \$10,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schmit, L. A. ARC/Zill, L. P. 41-Aero Engr
(21-701 791-40-15) (21-701 791-93-15)

NCA 2-90406 University of California - Los Angeles 1507
Transonic flow studies
Period *Obligations*
01/01/74-04/30/75 FY75: \$3,000 TOTAL: \$3,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cole, J. D. ARC/Zill, L. P. 41-Aero Engr
(21-704 501-06-01)

NCA 2-90501 University of California - Los Angeles 1508
Comparison of real-time digital algorithms for the extraction of pitch in speech
Period *Obligations*
08/15/74-06/30/75 FY75: \$4,033 TOTAL: \$4,033
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Carterette, E. C. ARC/Zill, L. P. 21-Mathematics
(21-704 504-29-03)

**NASA'S UNIVERSITY PROGRAM
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NCA 2-90502 University of California - Los Angeles 1509
Role of prolactin and vasopressin in regulation of water and salt balance

<i>Period</i>	<i>Obligations</i>	
09/01/74-08/31/75	FY75: \$11,855	TOTAL: \$11,855
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Parlow, A. (21-970 970-21-16)	ARC/Zill, L. P.	53-Other Medical

NGL 05-007-006 University of California - Los Angeles 1515
Studies on the high pressure solid phases of inert gases, particularly as they might relate to planetary interiors

<i>Period</i>	<i>Obligations</i>	
09/24/62-09/30/76	FY75:	TOTAL: \$470,622
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kennedy, G. C. (10-810 195-42-68)	HQ-SM/Bryson, R. P. HQ-SM/Roberson, F. I.	32-Geological Sci 11-Astronomy

NCA 2-90503 University of California - Los Angeles 1510
Development of techniques to separate diezomagnet signals of seismic origin

<i>Period</i>	<i>Obligations</i>	
09/15/74-09/30/75	FY75: \$6,000	TOTAL: \$6,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Coleman, P. J., Jr. (21-630 161-02-04)	ARC/Zill, L. P.	32-Geological Sci

NGL 05-007-046 University of California - Los Angeles 1516
Solar elements, their physical parameters and abundances

<i>Period</i>	<i>Obligations</i>	
10/06/65-06/30/74	FY75:	TOTAL: \$373,081
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Alley, L. H. (10-850 188-00-00)	HQ-SG/Weldon, J. M.	11-Astronomy

NGL 05-007-002 University of California - Los Angeles 1511
Theoretical evaluation of the internal structures and atmospheres of planets and the moon

<i>Period</i>	<i>Obligations</i>	
01/01/62-12/31/76	FY75: \$30,751	TOTAL: \$576,804
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stampfer, J. F., Jr. (10-810 195-20-02)	HQ-SM/Bryson, R. P. HQ-SM/Roberson, F. I.	32-Geological Sci (10-810 195-42-65)

NGL 05-007-190 University of California - Los Angeles 1517
Theoretical space plasma physics

<i>Period</i>	<i>Obligations</i>	
06/27/68-09/30/77	FY75: \$35,000	TOTAL: \$283,380
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kennel, C. F. (10-850 188-36-55)	HQ-SG/Berko, F. W. HQ-SG/Schmerling, E. R.	19-Phys Sci, NEC (10-850 188-00-00)

NGL 05-007-003 University of California - Los Angeles 1512
Interdisciplinary space oriented research in physical, biological and engineering sciences

<i>Period</i>	<i>Obligations</i>	
03/01/62-03/31/75	FY75:	TOTAL: \$4,840,654
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Libby, W. F. (10-860 190-00-00)	HQ-P/Redding, E. R.	99-Multi-Discip (10-860 849-00-00)

NGL 05-007-287 University of California - Los Angeles 1518
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
01/12/71-06/30/75	FY75:	TOTAL: \$284,794
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wetherill, G. W. (72-910 914-40-00)	JSC/Harris, J. W.	13-Physics

NGL 05-007-004 University of California - Los Angeles 1513
Theoretical & experimental investigations of particles & fields in space, including construction of prototype instrumentation

<i>Period</i>	<i>Obligations</i>	
03/01/62-09/30/77	FY75: \$150,000	TOTAL: \$2,180,554
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Coleman, P. J., Jr. (10-850 188-36-55)	HQ-SG/Berko, F. W. HQ-SG/Schmerling, E. R.	39-Env Sci, NEC (10-850 385-36-00)

NGL 05-007-330 University of California - Los Angeles 1519
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
05/18/71-01/31/76	FY75: \$20,000	TOTAL: \$200,050
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Warren, N. (72-810 388-10-03)	JSC/Harris, J. W.	13-Physics

NGL 05-007-005 University of California - Los Angeles 1514
Isotopic chemistry of meteorites, including studies of variation in isotopic abundances among discrete specimens

<i>Period</i>	<i>Obligations</i>	
09/20/62-08/31/76	FY75:	TOTAL: \$312,344
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wetherill, G. W. (10-850 188-45-52)	HQ-SG/Dubin, M. HQ-SM/Bryson, R. P.	11-Astronomy (10-810 383-09-57)

NGL 05-007-367 University of California - Los Angeles 1520
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
06/30/72-01/31/76	FY75: \$34,120	TOTAL: \$237,070
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wasson, J. T. (72-810 388-10-02)	JSC/Harris, J. W.	12-Chemistry

NGL 05-007-379 University of California - Los Angeles 1521
Flight dynamics analysis and system identification

<i>Period</i>	<i>Obligations</i>	
12/01/72-11/30/77	FY75: \$15,000	TOTAL: \$124,548
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Balakrishnan, A. V. (24-702 505-06-91)	FRC/Rediess, H. A.	41-Aero Engr (24-704 501-26-01)

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NGR 05-007-091 University of California - Los Angeles 1522
Investigation of optimum meteorological satellite techniques by numerical simulation experiments

Period	Obligations	
11/09/64-09/30/74	FY75: \$422	TOTAL: \$590,522
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Mintz, Y.	GSFC/Wexler, R.	31-Atmos Sci
Arakawa, A.		
Webster, P. J.		
(51-620 610-11-00)		

NGR 05-007-215 University of California - Los Angeles 1523
Analysis of carbon compounds

Period	Obligations	
04/01/68-12/31/73	FY75:	TOTAL: \$145,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Libby, W. F.	HQ-SL/Young, R. S.	32-Geological Sci
(10-870 189-00-00)		

NGR 05-007-221 University of California - Los Angeles 1524
Nature and changes of organic matter in deep ocean cores

Period	Obligations	
08/08/69-12/31/75	FY75: \$59,000	TOTAL: \$335,415
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kaplan, I. R.	HQ-SL/Young, R. S.	32-Geological Sci
(10-840 192-55-62)	(10-870 189-00-00)	

NGR 05-007-276 University of California - Los Angeles 1525
Data analysis on the OGO-3 and OGO-4 search coil magnetometers

Period	Obligations	
04/03/70-09/31/75	FY75: \$20,000	TOTAL: \$160,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Holzer, R. E.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Schmerling, E. R.	
(10-850 188-36-55)		

NGR 05-007-283 University of California - Los Angeles 1526
Analysis of laser ranging to the moon

Period	Obligations	
04/16/70-09/30/74	FY75:	TOTAL: \$51,473
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kaula, W. M.	HQ-SM/Strickland, A. T.	32-Geological Sci
(10-810 387-30-01)	(10-810 387-00-00)	(10-810 383-09-56)

NGR 05-007-289 University of California - Los Angeles 1527
Lunar sample analysis

Period	Obligations	
12/29/70-01/31/76	FY75: \$75,000	TOTAL: \$313,780
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kaplan, I. R.	JSC/Harris, J. W.	13-Physics
(72-810 388-10-02)	(72-810 388-10-04)	

NGR 05-007-317 University of California - Los Angeles 1528
Photogeologic interpretation of Mariner/Mars imagery

Period	Obligations	
03/09/71-01/14/76	FY75: \$12,215	TOTAL: \$69,096
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Schubert, G.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Holt, H. E.	
(10-840 384-50-80)		

NGR 05-007-323 University of California - Los Angeles 1529
Research in aeronautics & air transportation

Period	Obligations	
03/25/71-10/01/77	FY75: \$49,945	TOTAL: \$229,834
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Meecham, W. C.	ARC/Anderson, A. E.	41-Aero Engr
Cole, J. D.	ARC/Levin, A. D.	
(21-702 505-90-81)	(21-760 126-00-00)	

NGR 05-007-328 University of California - Los Angeles 1530
Numerical modeling of the global atmosphere and the world oceans

Period	Obligations	
08/15/71-12/31/75	FY75: \$56,000	TOTAL: \$295,309
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Mintz, Y.	GSFC/Halem, M.	31-Atmos Sci
Arakawa, A.		
Yanai, M.		
(51-680 611-13-00)	(51-680 408-02-02)	(51-680 175-11-41)

NGR 05-007-329 University of California - Los Angeles 1531
Elemental variations in genetically related meteorites

Period	Obligations	
04/27/71-08/31/76	FY75: \$36,356	TOTAL: \$158,017
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wasson, J. T.	HQ-SM/Bryson, R. P.	32-Geological Sci
Scott, R. D.	HQ-SM/Roberson, F. I.	
(10-810 383-09-57)	(10-810 195-20-04)	

NGR 05-007-337 University of California - Los Angeles 1532
Approximation concepts in structural synthesis

Period	Obligations	
04/05/72-06/30/76	FY75: \$94,399	TOTAL: \$263,863
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Schmit, L. A.	LARC/Stroud, W. J.	41-Aero Engr
(23-704 502-22-01)	(23-740 134-00-00)	(23-704 506-17-21)

NGR 05-007-338 University of California - Los Angeles 1533
Biocompatibility and other essential characteristics of several new plastics and new metal alloys for possible use in total joint replacements

Period	Obligations	
12/01/71-07/31/76	FY75: \$20,135	TOTAL: \$61,255
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Amstutz, H. C.	LERC/Johnson, R. L.	47-Materials Engr
(22-704 506-16-22)		

NGR 05-007-351 University of California - Los Angeles 1534
Correlative studies of Apollo 15 and 16 satellite magnetometer data with the Explorer 35 and lunar surface magnetometer data

Period	Obligations	
05/25/72-01/31/76	FY75: \$108,000	TOTAL: \$315,899
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Coleman, P. J., Jr.	HQ-SM/Bryson, R. P.	32-Geological Sci
Russell, C. T.	HQ-SM/Roberson, F. I.	
(10-810 383-20-03)		

NGR 05-007-395 University of California - Los Angeles 1535
Computational techniques for unsteady transflow

Period	Obligations	
02/07/73-08/31/75	FY75: \$20,380	TOTAL: \$35,380
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cole, J. D.	LARC/Bland, S. R.	41-Aero Engr
Krupp, J. A.	LARC/Bennett, R. M.	
(23-702 505-02-21)		

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NGR 05-007-407 University of California - Los Angeles 1536
Paleobiologic studies of the antiquity and precambrian evolution of life

<i>Period</i>	<i>Obligations</i>	
04/10/73-05/31/76	FY75: \$30,010	TOTAL: \$87,450
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Schopf, J. W.	HQ-SL/Young, R. S.	32-Geological Sci
(10-840 192-55-62)		

NGR 05-007-414 University of California - Los Angeles 1537
Aeroelastic stability of helicopter blades in hover and in forward flight using various unsteady aerodynamic theories

<i>Period</i>	<i>Obligations</i>	
09/01/73-08/31/75	FY75: \$30,832	TOTAL: \$59,991
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Friedmann, P. P.	LARC/Hammond, C. E.	41-Aero Engr
	LARC/Kvaternik, R. G.	
(23-702 505-10-26)	(23-702 760-63-00)	

NGR 05-007-416 University of California - Los Angeles 1538
Research on interaction of satellite-speed helium atoms with aluminum and quartz surfaces

<i>Period</i>	<i>Obligations</i>	
10/09/73-12/25/75	FY75: \$48,018	TOTAL: \$85,381
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Knuth, E. L.	LARC/Keating, G. M.	13-Physics
Liu, S. M.		
(23-840 185-47-91)	(23-850 863-11-00)	

NGR 05-007-418 University of California - Los Angeles 1539
Utricular influences on visual motor control research

<i>Period</i>	<i>Obligations</i>	
09/01/73-09/01/75	FY75: \$20,263	TOTAL: \$49,713
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Markham, C. H.	ARC/Daunton, N. G.	51-Biology
Estes, M. S.	ARC/Mehler, W. R.	
(21-970 970-21-11)		

NGR 05-007-437 University of California - Los Angeles 1540
Analysis of Mariner 71 infrared radiometer data

<i>Period</i>	<i>Obligations</i>	
10/01/73-12/31/74	FY75:	TOTAL: \$19,469
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kieffer, H. H.	HQ-SL/Fellows, R. F.	31-Atmos Sci
(10-840 384-47-81)		

NGR 05-007-489 University of California - Los Angeles 1541
Investigation of shell stars and eclipsing binaries

<i>Period</i>	<i>Obligations</i>	
05/01/74-04/30/75	FY75:	TOTAL: \$13,400
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Plavec, M.	GSFC/Kupperian, J. E.	11-Astronomy
(51-850 831-43-00)		

NSG 1106 University of California - Los Angeles 1542
The polarimeter & multispectral radiometer as remote probes of aerosols

<i>Period</i>	<i>Obligations</i>	
10/01/74-09/30/75	FY75: \$35,465	TOTAL: \$35,465
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kuriyan, J. G.	LARC/McCormick, M. P.	31-Atmos Sci
	LARC/Crumbley, K. H.	
(23-680 176-11-31)		

NSG 2025 University of California - Los Angeles 1543
Metal corrosion studies

<i>Period</i>	<i>Obligations</i>	
05/01/74-09/30/75	FY75: \$13,683	TOTAL: \$45,318
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Douglass, D. L.	ARC/Poppa, H. R.	47-Materials Engr
(21-704 502-01-01)		

NSG 2068 University of California - Los Angeles 1544
Visualization and quantitative analysis of vortex-wake of aircraft by movie holography

<i>Period</i>	<i>Obligations</i>	
02/05/75-01/31/76	FY75: \$34,716	TOTAL: \$34,716
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Charwat, A. F.	ARC/Orloff, K. L.	41-Aero Engr
Fourney, M. E.		
(21-702 514-52-01)		

NSG 4001 University of California - Los Angeles 1545
Short-time climatology related to air turbulence

<i>Period</i>	<i>Obligations</i>	
03/01/74-06/30/76	FY75: \$20,394	TOTAL: \$44,244
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wurtele, M. G.	FRC/Ehernberger, L. J.	31-Atmos Sci
(24-704 501-26-01)		

NSG 5056 University of California - Los Angeles 1546
Investigation of the far UV spectra of the pole on B-E stars Cen and Cyg

<i>Period</i>	<i>Obligations</i>	
02/01/75-01/31/76	FY75: \$8,623	TOTAL: \$8,623
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Peters, C. J.	GSFC/Kupperian, J. E.	11-Astronomy
(51-850 831-42-00)		

NSG 5070 University of California - Los Angeles 1547
Depletions and physical conditions within diffuse interstellar clouds

<i>Period</i>	<i>Obligations</i>	
10/01/75-09/30/76	FY75: \$2,500	TOTAL: \$2,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jura, M. A.	GSFC/Kupperian, J. E.	11-Astronomy
(51-850 831-42-00)		

NSG 7002 University of California - Los Angeles 1548
Anelastic models of fault zone tectonics and their measurement by space techniques

<i>Period</i>	<i>Obligations</i>	
11/01/73-12/31/75	FY75: \$56,381	TOTAL: \$116,110
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kaula, W. M.	HQ-ES/Murphy, J. P.	32-Geological Sci
Schubert, G.		
(10-630 369-02-01)	(10-630 639-10-00)	(10-630 161-02-07)

NSG 7008 University of California - Los Angeles 1549
Third Solar Wind Conference

<i>Period</i>	<i>Obligations</i>	
01/01/74-12/31/74	FY75:	TOTAL: \$8,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Russell, C. T.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Schmerling, E. R.	
(10-850 188-36-55)		

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NSG 7052 University of California - Los Angeles 1550
Shock processes in terrestrial analogs of porous lunar & meteoritic materials

Period	Obligations	
04/01/74-04/30/76	FY75: \$25,000	TOTAL: \$50,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kieffer, S. W.	HQ-SM/Bryson, R. P.	32-Geological Sci
	HQ-SM/Roberson, F. I.	

(10-810 195-20-05)

NSG 7113 University of California - Los Angeles 1551
Dynamical studies of solar system origin and evolution

Period	Obligations	
01/01/75-01/31/76	FY75: \$9,000	TOTAL: \$9,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kaula, W. M.	HQ-SL/Dwornik, S. E.	11-Astronomy
	HQ-SL/Holt, H. E.	

(10-840 185-50-81)

NGL 05-008-005 University of California - Riverside 1552
Atomic scattering theory

Period	Obligations	
11/29/66-02/28/78	FY75: \$10,000	TOTAL: \$120,953
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Poe, R. T.	GSFC/Temkin, A.	13-Physics
(51-850 188-48-52)	(51-850 188-00-00)	

NGR 05-008-022 University of California - Riverside 1553
Measurement of neutrons from sun

Period	Obligations	
05/16/69-07/31/75	FY75: \$40,000	TOTAL: \$270,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
White, R. S.	HQ-SG/Opp, A. G.	11-Astronomy
	HQ-SG/Lazarus, A. J.	

(10-850 188-46-56) (10-850 188-46-51)

NAS 2-6552 University of California - San Diego 1554
Data analysis of Jovian trapped radiation by Pioneer F/G

Period	Obligations	
01/25/72-06/30/75	FY75: \$187,000	TOTAL: \$482,071
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fillius, R. W.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	

(21-840 811-22-00)

NAS 5-11080 University of California - San Diego 1555
Cosmic-X-ray experiment OSO-H

Period	Obligations	
09/13/67-10/31/75	FY75: \$130,000	TOTAL: \$2,103,131
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Baity, W. A.	GSFC/Berko, F. W.	19-Phys Sci, NEC
Ulmer, A.		

(51-850 821-22-00)

NAS 5-11081 University of California - San Diego 1556
Soft & hard solar X-ray experiment for OSO

Period	Obligations	
09/13/67-06/30/75	FY75: \$60,000	TOTAL: \$2,161,543
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Peterson, L. E.	GSFC/Donley, J. L.	31-Atmos Sci

(51-850 821-22-00)

NAS 5-21055 University of California - San Diego 1557
Programmable auroral particles experiment to be flown on the ATS-F

Period	Obligations	
06/27/69-04/30/76	FY75: \$100,000	TOTAL: \$1,213,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McIlwain, C. E.	GSFC/Wales, R. O.	13-Physics
	GSFC/Corrigan, J. P.	

(51-620 646-22-00) (51-850 385-36-00)

NAS 5-22375 University of California - San Diego 1558
Hard X-ray imaging system study

Period	Obligations	
05/13/75-06/13/76	FY75: \$26,888	TOTAL: \$26,888
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Peterson, L. E.	GSFC/White, A.	11-Astronomy
(51-850 356-38-01)	(51-850 356-48-00)	

NAS 6-2506 University of California - San Diego 1559
GEOS-C research

Period	Obligations	
12/17/74-06/17/77	FY75: \$33,000	TOTAL: \$33,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hendershott, M.	WFC/Stanley, R.	11-Astronomy
Munk, W.		
Zetler, B.		

(53-630 369-07-01)

NAS 8-27974 University of California - San Diego 1560
Design & development of AGR-4 MeV range gamma ray telescope experiment under the HEAO program

Period	Obligations	
06/22/72-04/15/78	FY75: \$1,658,580	TOTAL: \$4,748,019
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Peterson, L. E.	MSFC/Jordan, W. E.	11-Astronomy
	MSFC/Jones, J. B.	

(62-850 832-12-00) (62-850 832-00-00)

NAS 8-31145 University of California - San Diego 1561
Joint analysis of satellite data study

Period	Obligations	
12/17/74-10/17/75	FY75: \$13,851	TOTAL: \$13,851
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McIlwain, C. E.	MSFC/Chappell, C. R.	13-Physics
	MSFC/Burch, J. L.	

(62-850 385-36-00)

NGL 05-005-003 University of California - San Diego 1562
Laboratory and balloon experiments in X-ray and gamma ray astronomy

Period	Obligations	
09/15/62-02/28/75	FY75: \$85,295	TOTAL: \$1,715,752
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Peterson, L. E.	HQ-SG/Opp, A. G.	13-Physics
Pelling, R. M.	HQ-SG/Roman, N. G.	

(10-850 188-46-57) (10-850 188-00-00)

NGL 05-005-004 University of California - San Diego 1563
Theoretical studies in astrophysics

Period	Obligations	
02/04/63-03/31/78	FY75: \$51,500	TOTAL: \$663,633
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gould, R. J.	HQ-SG/Roman, N. G.	11-Astronomy
Burbidge, G. R.	HQ-SG/Rosendhal, J. D.	

(10-850 188-41-51) (10-850 188-00-00)

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NGL 05-005-007	University of California - San Diego	1564
Study of geomagnetically trapped particles by Explorer & Injun satellite data, refining particle detectors, detector systems & telemetered-data processing equipment		
<i>Period</i>	<i>Obligations</i>	
02/20/64-08/31/77	FY75: \$160,000	TOTAL: \$1,697,894
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McIlwain, C. E.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Schmerling, E. R.	
(10-850 188-36-55)	(10-850 385-36-00)	
NGL 05-009-002	University of California - San Diego	1565
Studies of the composition and structure of meteorites		
<i>Period</i>	<i>Obligations</i>	
10/02/63-02/28/78	FY75: \$40,000	TOTAL: \$524,024
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Arrhenius, G. O.	HQ-SM/Bryson, R. P.	32-Geological Sci
	HQ-SM/Roberson, F. I.	
(10-810 195-20-02)	(10-810 195-42-65)	(10-840 185-00-00)
NGL 05-009-004	University of California - San Diego	1566
Research on interaction of meteorites & cosmic rays & consideration of origin & history of meteorites		
<i>Period</i>	<i>Obligations</i>	
12/19/62-03/14/78	FY75:	TOTAL: \$884,214
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Arnold, J. R.	HQ-SM/Bryson, R. P.	32-Geological Sci
	HQ-SM/Roberson, F. I.	
(10-810 195-42-67)	(10-810 383-09-57)	(10-850 188-00-00)
NGL 05-009-005	University of California - San Diego	1567
Research on general geochemical problems, including meteorite materials, rare gas content of meteorites & separation in gas phase at time of formation of solar system		
<i>Period</i>	<i>Obligations</i>	
10/31/62-02/28/78	FY75: \$25,000	TOTAL: \$465,707
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Suess, H. E.	HQ-SM/Bryson, R. P.	19-Phys Sci, NEC
	HQ-SM/Roberson, F. I.	
(10-810 195-20-02)	(10-810 195-42-65)	(10-840 185-00-00)
NGL 05-009-109	University of California - San Diego	1568
In-flight evaluation of weightlessness and gravity on cardiopulmonary function of man		
<i>Period</i>	<i>Obligations</i>	
02/17/69-11/01/77	FY75: \$75,000	TOTAL: \$652,351
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
West, J. B.	ARC/Billingham, J.	53-Other Medical
	ARC/Johnson, R. D.	
(21-970 970-21-13)	(21-970 970-21-62)	
NGL 05-009-148	University of California - San Diego	1569
Lunar sample analysis		
<i>Period</i>	<i>Obligations</i>	
02/11/71-01/31/78	FY75: \$94,000	TOTAL: \$580,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Arnold, J. R.	JSC/Harris, J. W.	12-Chemistry
(72-810 388-10-02)		
NGL 05-009-150	University of California - San Diego	1570
Lunar sample analysis		
<i>Period</i>	<i>Obligations</i>	
02/01/71-01/31/78	FY75: \$134,912	TOTAL: \$721,392
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Marti, K.	JSC/Harris, J. W.	12-Chemistry
(72-810 388-10-02)		
NGL 05-009-154	University of California - San Diego	1571
Lunar sample analysis		
<i>Period</i>	<i>Obligations</i>	
01/06/71-01/31/76	FY75: \$24,902	TOTAL: \$294,902
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Arrhenius, G. O.	JSC/Harris, J. W.	13-Physics
(72-810 388-10-01)		
NGL 05-009-230	University of California - San Diego	1572
Infrared astronomy research		
<i>Period</i>	<i>Obligations</i>	
03/08/73-12/01/76	FY75: \$19,461	TOTAL: \$109,341
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Soifrr, B. T.	ARC/Cameron, R. M.	11-Astronomy
Stein, W. A.	ARC/Gillespie, C. M., Jr.	
(21-850 188-41-55)	(21-850 352-02-03)	(10-850 352-02-03)
NGR 05-005-005	University of California - San Diego	1573
Study of lunar gamma ray emission		
<i>Period</i>	<i>Obligations</i>	
09/10/63-07/31/75	FY75: \$84,871	TOTAL: \$525,478
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Arnold, J. R.	HQ-SM/Bryson, R. P.	32-Geological Sci
Peterson, L. E.		
(10-810 195-20-06)	(10-860 849-00-00)	(10-810 195-00-00)
NGR 05-005-055	University of California - San Diego	1574
Infrared astronomic observation from high altitude airplane/telescope program		
<i>Period</i>	<i>Obligations</i>	
06/05/73-09/01/75	FY75: \$31,000	TOTAL: \$71,217
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stein, W. A.	ARC/Cameron, R. M.	11-Astronomy
Gillett, F. C.	ARC/Gillespie, C. M., Jr.	
(21-850 352-02-03)		
NGR 05-009-075	University of California - San Diego	1575
Velocity distributions and electron moment equations		
<i>Period</i>	<i>Obligations</i>	
09/13/67-08/31/75	FY75: \$40,000	TOTAL: \$362,784
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Banks, P. M.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Schmerling, E. R.	
(10-850 188-36-56)		
NGR 05-009-076	University of California - San Diego	1576
Theory of wave propagation and wave-particle interaction in the earth magnetosphere		
<i>Period</i>	<i>Obligations</i>	
10/19/67-09/30/75	FY75: \$35,000	TOTAL: \$323,656
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fejer, J. A.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Schmerling, E. R.	
(10-850 188-36-56)		

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NGR 05-009-081 University of California - San Diego 1577
Theoretical studies of fields, particles and plasmas in space
Period *Obligations*
02/08/68-09/30/75 FY75: TOTAL: \$422,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Axford, W. I. HQ-SG/Schmerling, E. R. 13-Physics
(10-850 188-36-55) (10-850 188-00-00)

NGR 05-009-083 University of California - San Diego 1578
Electrophysiological studies of the nervous system
Period *Obligations*
01/01/68-09/01/78 FY75: TOTAL: \$113,059
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Galambos, R. ARC/Winter, D. L. 61-Biol Aspects
(10-870 189-00-00) (21-870 189-00-00)

NGR 05-009-110 University of California - San Diego 1579
The structure and evolution of the asteroid belt
Period *Obligations*
01/23/70-08/31/76 FY75: \$30,000 TOTAL: \$338,690
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Alfven, H. HQ-SG/Dwornik, S. E. 11-Astronomy
Mendis, D. A. HQ-SL/Wahmann, R.
(10-850 188-45-51) (10-840 185-50-81)

NGR 05-009-178 University of California - San Diego 1580
Measurement of fluctuations in turbulent boundary layers with heterogeneous composition
Period *Obligations*
02/16/72-08/31/74 FY75: TOTAL: \$30,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Libby, P. A. LARC/Gessow, A. 41-Aero Engr
LARC/Bertram, M. H.
(23-760 136-00-00)

NGR 05-009-188 University of California - San Diego 1581
Construction of a 200 channel photometer for use in low light level astronomy
Period *Obligations*
05/17/72-06/30/75 FY75: \$150,000 TOTAL: \$400,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
McIlwain, C. E. HQ-SG/Aucremanne, M. J. 11-Astronomy
Burbidge, M. E. GSFC/Sobieski, S.
(10-850 188-78-56) (10-850 188-78-57)

NGR 05-009-192 University of California - San Diego 1582
Study visual aspects of aircraft operation
Period *Obligations*
02/01/72-08/31/75 FY75: TOTAL: \$157,300
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Harris, J. L. ARC/Haines, R. F. 59-Life Sci, NEC
ARC/Huff, E. M.
(21-704 504-29-03) (21-704 501-29-03)

NGR 05-009-198 University of California - San Diego 1583
Mechanisms of alertness in man
Period *Obligations*
05/24/72-06/01/76 FY75: \$40,000 TOTAL: \$183,479
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Galambos, R. ARC/Anliker, J. E. 59-Life Sci, NEC
ARC/Nagel, D. C.
(21-970 970-21-11) (21-970 970-21-53) (21-970 970-24-01)

NGR 05-009-213 University of California - San Diego 1584
Hydrostatic pressure and macro-molecular synthesis in marine bacteria
Period *Obligations*
04/12/73-05/30/76 FY75: TOTAL: \$89,954
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Yayanos, A. A. HQ-SL/Young, R. S. 51-Biology
(10-840 192-55-64)

NGR 05-009-218 University of California - San Diego 1585
An automatic analyzer for amino acids purines and pyrimidines to examine lunar and Martian soil samples
Period *Obligations*
09/12/72-08/15/75 FY75: \$41,100 TOTAL: \$122,232
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Miller, S. L. HQ-SL/Young, R. S. 12-Chemistry
(10-840 192-55-61)

NGR 05-009-226 University of California - San Diego 1586
Absolute GF-value and hydrogen atom collision
Period *Obligations*
04/12/73-08/31/75 FY75: \$20,117 TOTAL: \$47,117
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Penner, S. S. HQ-SG/Jordan, S. D. 11-Astronomy
HQ-SG/Timothy, A. F.
(10-850 188-38-53)

NGR 05-009-239 University of California - San Diego 1587
Low resolution spectrograph for the large space telescope
Period *Obligations*
10/01/73-08/31/75 FY75: \$6,505 TOTAL: \$18,505
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Beaver, E. A. GSFC/Sobieski, S. 11-Astronomy
McIlwain, C. E. GSFC/Meese, K. J.
Burbidge, E. M.
(51-850 188-78-58)

NGR 05-009-246 University of California - San Diego 1588
Geophysical perturbations on satellite geodesy
Period *Obligations*
11/01/73-10/31/75 FY75: \$130,000 TOTAL: \$148,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Berger, J. GSFC/Carpenter, L. H. 39-Env Sci, NEC
Haubrich, R. A.
(51-630 653-00-00) (51-630 161-03-03)

NGR 05-009-256 University of California - San Diego 1589
Conference on Magnetospheric-Ionospheric Coupling
Period *Obligations*
12/01/73-02/28/75 FY75: TOTAL: \$5,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Banks, P. M. HQ-SG/Schmerling, E. R. 19-Phys Sci, NEC
HQ-SG/Kavanagh, L. D., Jr.
(10-850 188-36-55)

NGR 05-009-257 University of California - San Diego 1590
Single scan television radiography
Period *Obligations*
11/01/73-11/01/75 FY75: \$48,979 TOTAL: \$78,979
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bailey, N. A. ARC/Sandler, H. 52-Clinical Med
(21-970 970-23-30)

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NGR 05-009-260 University of California - San Diego 1591
Rapid quality control of photographs

<i>Period</i>	<i>Obligations</i>	
03/18/74-03/17/76	FY75: \$6,000	TOTAL: \$17,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lee, S. H.	GSFC/Shulman, A. R.	13-Physics
	GSFC/Webb, W. C.	

(51-500 310-40-39)

NGR 05-009-264 University of California - San Diego 1592
Optical parallel processing

<i>Period</i>	<i>Obligations</i>	
03/15/74-04/30/76	FY75: \$20,000	TOTAL: \$62,100
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lee, S. H.	GSFC/Schaefer, D. H.	49-Engr, NEC

(51-704 502-23-32)

NSG 3034 University of California - San Diego 1593
Preparation and identification of hydrides of intermetallic compounds

<i>Period</i>	<i>Obligations</i>	
08/01/74-08/01/76	FY75: \$64,331	TOTAL: \$64,331
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Oesterreicher, H.	LERC/Woollam, J. A.	47-Materials Engr
	LERC/Brown, G. V.	

(22-704 502-10-02)

NSG 3047 University of California - San Diego 1594
Investigation of droplet burning at zero g

<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$25,000	TOTAL: \$25,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Williams, F. A.	LERC/Cochran, T. H.	43-Chem Engr

(22-704 750-01-51)

NSG 3055 University of California - San Diego 1595
Chemical vapor deposition of high TC superconductors

<i>Period</i>	<i>Obligations</i>	
05/01/75-04/30/76	FY75: \$60,000	TOTAL: \$60,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Webb, G. W.	LERC/Woollan, J. A.	19-Phys Sci, NEC

(22-704 506-25-21)

NSG 7001 University of California - San Diego 1596
Investigation of auroral phenomena

<i>Period</i>	<i>Obligations</i>	
11/01/73-10/31/74	FY75:	TOTAL: \$30,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Doupnik, J. R.	HQ-SG/Schmerling, E. R.	31-Atmos Sci
	HQ-SG/Kavanagh, L. D., Jr.	

(10-850 188-36-55)

NSG 7027 University of California - San Diego 1597
Orbital geochemical data analysis and synthesis

<i>Period</i>	<i>Obligations</i>	
03/01/74-02/01/76	FY75: \$69,136	TOTAL: \$144,095
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Arnold, J. R.	HQ-SM/Bryson, R. P.	32-Geological Sci
Peterson, L. E.	HQ-SM/Roberson, F. I.	

(10-810 383-20-04)

NSG 7100 University of California - San Diego 1598
Infrared continuum observations of solar atmospheric structure

<i>Period</i>	<i>Obligations</i>	
11/14/74-06/30/76	FY75: \$35,001	TOTAL: \$35,001
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hudson, H. S.	HQ-SG/Jordan, S. D.	13-Physics
	HQ-SG/Timothy, A. F.	

(10-850 385-38-00)

NSG 7102 University of California - San Diego 1599
Research on process controlling the formation and evolution of small bodies in the solar system

<i>Period</i>	<i>Obligations</i>	
09/01/74-08/31/75	FY75: \$50,000	TOTAL: \$50,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Alfven, H.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Holt, H. E.	

(10-840 185-50-81)

NSG 7121 University of California - San Diego 1600
Carbonaceous chondrites early irradiation and 244/pu fission records

<i>Period</i>	<i>Obligations</i>	
02/27/75-01/31/76	FY75: \$17,142	TOTAL: \$17,142
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
MacDougall, J. D.	HQ-SM/Bryson, R. P.	32-Geological Sci

(10-810 195-20-04)

NCA 2-65301 University of California - San Francisco 1601
Comparative anatomical survey of the habenular nuclear complex in mammals

<i>Period</i>	<i>Obligations</i>	
01/01/73-09/30/75	FY75: \$6,000	TOTAL: \$6,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Degroot, J.	ARC/Zill, L. P.	51-Biology

(21-970 970-21-11)

NCA 2-65401 University of California - San Francisco 1602
Glucocorticoid feedback sites in dog brains

<i>Period</i>	<i>Obligations</i>	
12/01/73-04/30/75	FY75: \$2,000	TOTAL: \$2,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dallman, M. F.	ARC/Zill, L. P.	51-Biology

(21-970 970-21-16)

NCA 2-65402 University of California - San Francisco 1603
Ecological factor involved in maintenance of skin flora

<i>Period</i>	<i>Obligations</i>	
06/01/74-06/01/75	FY75: \$3,000	TOTAL: \$3,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Aly, R.	ARC/Zill, L. P.	51-Biology

(21-970 970-21-25)

NCA 2-65502 University of California - San Francisco 1604
Regulation of adrenal growth and function

<i>Period</i>	<i>Obligations</i>	
05/01/75-04/30/76	FY75: \$14,340	TOTAL: \$14,340
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dallman, M. F.	ARC/Zill, L. P.	51-Biology

(21-970 970-21-16)

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NGL 05-025-014 University of California - San Francisco 1605
Structure and function of the purple membrane of halobacterium
halobium

<i>Period</i>	<i>Obligations</i>	
05/17/72-04/30/76	FY75: TOTAL: \$187,903	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stolckenuss, W.	ARC/Zill, L. P.	59-Life Sci, NEC
	HQ-SL/Young, R. S.	

(10-970 970-14-00)

NCA 2-80501 University of California - Santa Barbara 1606
Measurement of kinetics for chemisorption of a gas

<i>Period</i>	<i>Obligations</i>	
09/01/74-03/31/75	FY75: \$9,959 TOTAL: \$9,959	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Shanabarger, M. R.	ARC/Zill, L. P.	12-Chemistry
(21-702 505-01-21)		

NGR 05-010-035 University of California - Santa Barbara 1607
Pre-paleozoic biotas and environments

<i>Period</i>	<i>Obligations</i>	
08/01/68-07/31/75	FY75: \$35,000 TOTAL: \$245,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cloud, P. E.	HQ-SL/Young, R. S.	32-Geological Sci
(10-840 192-55-62)		

NGR 05-010-062 University of California - Santa Barbara 1608
Planetary geophysics

<i>Period</i>	<i>Obligations</i>	
03/01/73-06/30/75	FY75: \$12,794 TOTAL: \$44,798	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Peale, S. J.	HQ-SL/Dwornik, S. E.	32-Geological Sci
(10-840 185-50-81)	(10-840 185-00-00)	

NGR 05-010-081 University of California - Santa Barbara 1609
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
02/01/73-01/31/76	FY75: \$65,912 TOTAL: \$168,617	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tilton, G. R.	JSC/Harris, J. W.	32-Geological Sci
(72-810 388-10-03)		

NSG 7122 University of California - Santa Barbara 1610
Remanent magnetization of tektites

<i>Period</i>	<i>Obligations</i>	
10/01/74-01/31/76	FY75: \$46,439 TOTAL: \$46,439	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fuller, M. D.	HQ-SM/Bryson, R. P.	32-Geological Sci
(10-810 195-20-04)	HQ-SM/Roberson, F. I.	

NSG 9020 University of California - Santa Barbara 1611
Remanent magnetization of lunar samples

<i>Period</i>	<i>Obligations</i>	
10/31/74-01/31/76	FY75: \$109,537 TOTAL: \$109,537	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fuller, M. D.	JSC/Harris, J. W.	19-Phys Sci, NEC
(72-810 388-10-03)		

NGR 05-061-015 University of California - Santa Cruz 1612
Infrared instrumentation

<i>Period</i>	<i>Obligations</i>	
07/06/72-10/31/75	FY75: \$35,000 TOTAL: \$78,341	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rank, D. M.	HQ-SG/Bogges, N. W.	11-Astronomy
Osterbrock, D. E.	HQ-SG/Roman, N. G.	
(10-850 188-41-55)	(10-850 188-00-00)	

NAS 2-7059 University of San Francisco 1613
Apollo radiation dosimetry

<i>Period</i>	<i>Obligations</i>	
06/14/72-06/30/75	FY75: \$35,000 TOTAL: \$158,931	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Benton, E. V.	ARC/Taketa, S. T.	13-Physics
(21-970 970-21-63)	ARC/Tremor, J. W.	
	(21-970 970-24-02)	

NAS 8-26758 University of San Francisco 1614
Study for heavy particle, passive, personnel dosimetry using etched
particles

<i>Period</i>	<i>Obligations</i>	
01/21/71-11/30/75	FY75: \$10,000 TOTAL: \$88,504	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Benton, E. V.	MSFC/Parnell, T. A.	13-Physics
(62-980 975-72-51)	MSFC/Eby, P. B.	
	(62-960 964-50-00)	

NAS 9-12466 University of San Francisco 1615
Dosimetry materials

<i>Period</i>	<i>Obligations</i>	
02/02/72-12/31/76	FY75: \$70,000 TOTAL: \$190,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Benton, E. V.	JSC/Bailey, J. V.	51-Biology
(72-930 966-60-00)	(72-910 914-50-00)	(72-910 914-00-00)

NAS 9-14396 University of San Francisco 1616
ASTP experiment AR002

<i>Period</i>	<i>Obligations</i>	
10/16/74-10/15/75	FY75: \$10,000 TOTAL: \$10,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Benton, E. V.	JSC/Taylor, G. R.	51-Biology
(72-930 966-30-00)		

NCA 2-70501 University of San Francisco 1617
Influence of various diets on some biological parameters in
animals

<i>Period</i>	<i>Obligations</i>	
08/01/74-07/31/75	FY75: \$10,000 TOTAL: \$10,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Furst, A.	ARC/Zill, L. P.	51-Biology
(21-970 970-22-21)		

NCA 2-70503 University of San Francisco 1618
Respiratory analysis

<i>Period</i>	<i>Obligations</i>	
09/01/74-08/31/75	FY75: \$10,000 TOTAL: \$10,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Furst, A.	ARC/Zill, L. P.	52-Clinical Med
(21-970 970-21-14)		

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NCA 2-70504	University of San Francisco	1619	NCA 2-85501	University of Santa Clara	1626
Toxic risk assessment of manganese combustion products			Research in biomedical instrumentation		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
04/01/75-09/30/75	FY75: \$10,000	TOTAL: \$10,000	07/01/74-06/30/75	FY75: \$14,950	TOTAL: \$14,950
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Furst, A.	ARC/Zill, L. P.	53-Other Medical	Pefley, R. K.	ARC/Zill, L. P.	59-Life Sci, NEC
(21-030 997-00-00)			(21-970 970-21-12)	(21-970 970-23-30)	
NSG 2039	University of San Francisco	1620	NCA 2-85502	University of Santa Clara	1627
Research on reactive toxicity of pyrolysis effluents			To investigate the cosmo chemistry of inorganic acids		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
08/01/74-08/07/76	FY75: \$58,878	TOTAL: \$58,878	08/01/74-07/31/75	FY75: \$11,442	TOTAL: \$11,442
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hilado, C. J.	ARC/Kourtides, D. A.	12-Chemistry	Sweeney, M. A.	ARC/Zill, L. P.	12-Chemistry
Moreci, A.	ARC/Leon, H.		(21-840 192-55-62)		
(21-702 505-08-21)					
NSG 2051	University of San Francisco	1621	NCA 2-85503	University of Santa Clara	1628
Aerosol properties analysis from rocket exhausts and the natural stratosphere			The transmission of virus diseases in spaceflight		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
11/01/74-04/30/75	FY75: \$12,617	TOTAL: \$12,617	07/01/74-01/31/75	FY75: \$975	TOTAL: \$975
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harding-Barlow, A. I.	ARC/Farlow, N. H.	31-Atmos Sci	Caren, L.	ARC/Zill, L. P.	53-Other Medical
	ARC/Snetsinger, K. G.		(21-970 970-21-25)		
(21-702 743-02-22)					
NSG 2063	University of San Francisco	1622	NCA 2-85505	University of Santa Clara	1629
Effects of heavy particle radiation of the mammalian brain and related tissues			NOx suppression possibilities for gas turbine using methanol as a fuel		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/01/75-10/01/75	FY75: \$48,486	TOTAL: \$48,486	08/15/74-08/14/75	FY75: \$14,900	TOTAL: \$14,900
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Benton, E. V.	ARC/Miquel, J.	51-Biology	Pefley, R. K.	ARC/Zill, L. P.	41-Aero Engr
	ARC/Sadoff, M.		(21-702 505-04-11)		
(21-970 970-21-63)					
NAS 8-27799	University of Santa Clara	1623	NCA 2-85507	University of Santa Clara	1630
Study of algebraic methods for analysis and design of attitude control systems			A two dimensional model of the upper ionosphere of Venus		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/30/71-05/31/75	FY75:	TOTAL: \$77,029	06/01/75-05/31/76	FY75: \$14,248	TOTAL: \$14,248
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Siljak, D. D.	MSFC/Seltzer, S. M.	49-Engr, NEC	McCormick, P. T.	ARC/Zill, L. P.	31-Atmos Sci
	MSFC/Nurre, G. S.		(21-840 185-47-67)		
(62-850 188-78-57)					
NCA 2-85408	University of Santa Clara	1624	NCA 2-85508	University of Santa Clara	1631
Thermal history of the moon and the terrestrial planets			Study of selected NASA-AMES procurement systems		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
09/01/74-08/31/75	FY75: \$7,000	TOTAL: \$7,000	03/04/75-09/30/75	FY75: \$10,000	TOTAL: \$10,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Barker, W. A.	ARC/Zill, L. P.	32-Geological Sci	Bruno, A.	ARC/Zill, L. P.	75-Political Sci
Fricker, P. E.			(21-030 021-02-98)		
(21-810 195-21-02)	(21-810 195-42-53)				
NCA 2-85409	University of Santa Clara	1625	NCA 2-85509	University of Santa Clara	1632
New formulation of tensor analysis and its application to numerical solution of fluid mechanics			Physiology of extremely halophilic bacteria		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/75	FY75: \$15,000	TOTAL: \$15,000	06/01/75-05/31/76	FY75: \$7,920	TOTAL: \$7,920
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Markle, G. E.	ARC/Zill, L. P.	41-Aero Engr	Tomlison, G.	ARC/Zill, L. P.	51-Biology
(21-704 502-37-01)			(21-840 192-55-64)		
NCA 2-85510	University of Santa Clara	1633	NCA 2-85510	University of Santa Clara	1633
Legal implications of extraterrestrial civilizations			Legal implications of extraterrestrial civilizations		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/01/75-05/01/76	FY75: \$6,000	TOTAL: \$6,000	05/01/75-05/01/76	FY75: \$6,000	TOTAL: \$6,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Alexander, G. J.	ARC/Zill, L. P.	75-Political Sci	Alexander, G. J.	ARC/Zill, L. P.	75-Political Sci
(21-701 790-91-02)	(21-840 192-55-66)		(21-701 790-91-02)	(21-840 192-55-66)	

**NASA'S UNIVERSITY PROGRAM
CALIFORNIA (Continued)**

NGR 05-017-010 University of Santa Clara 1634
Extension of Mitrovics method for the analysis and design of dynamic systems

<i>Period</i>	<i>Obligations</i>	
01/01/67-11/01/75	FY75: \$24,975	TOTAL: \$209,856
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Siljak, D. D.	ARC/Doolin, B. F.	49-Engr, NEC
	ARC/Meyer, G.	
(21-702 505-07-11)	(21-750 125-00-00)	

NGR 05-017-027 University of Santa Clara 1635
Planetary geology-stellar evolution

<i>Period</i>	<i>Obligations</i>	
03/31/71-01/31/76	FY75: \$147,142	TOTAL: \$383,769
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Greeley, R.	ARC/Quaide, W. L.	32-Geological Sci
Aggarwal, H.	ARC/Farlow, N. F.	
Schultz, P. H.		
(21-840 384-50-60)	(21-910 914-40-00)	(21-810 383-25-03)

NGR 05-017-031 University of Santa Clara 1636
Evaluation of STOL navigation avionics

<i>Period</i>	<i>Obligations</i>	
05/10/72-09/15/76	FY75: \$140,000	TOTAL: \$140,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dunn, W. R.	ARC/Hruby, R. J.	41-Aero Engr
(21-763 133-00-00)		

NGR 05-017-033 University of Santa Clara 1637
Study of viscous flow fields

<i>Period</i>	<i>Obligations</i>	
09/05/72-12/31/75	FY75: \$64,729	TOTAL: \$152,893
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cheng, D. Y.	ARC/Muhlstein, L., Jr.	41-Aero Engr
	ARC/Buell, D. A.	
(21-702 505-06-42)	(21-704 506-17-31)	(21-702 505-03-11)

NGR 05-017-037 University of Santa Clara 1638
Mapping geology of Mars quadrangle MC-6 Casius

<i>Period</i>	<i>Obligations</i>	
01/01/73-08/31/75	FY75: \$27,239	TOTAL: \$48,770
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Greeley, R.	HQ-SL/Dwornik, S.E.	32-Geological Sci
	HQ-SL/Holt, H. E.	
(10-840 384-50-80)		

NSG 2036 University of Santa Clara 1639
Management systems research study

<i>Period</i>	<i>Obligations</i>	
07/15/74-12/31/75	FY75: \$86,152	TOTAL: \$86,152
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bruno, A. V.	ARC/Walsh, L. J.	99-Multi-Discip
(21-030 021-02-98)		

NSG 2075 University of Santa Clara 1640
Properties of moon and its environment from lunar magnetometer measurements

<i>Period</i>	<i>Obligations</i>	
09/01/75-09/01/76	FY75: \$38,677	TOTAL: \$38,677
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Parkin, C. W.	ARC/Dyal, P.	13-Physics
(21-810 383-31-00)		

NSG 7013 University of Santa Clara 1641
Descriptive lunar geology

<i>Period</i>	<i>Obligations</i>	
01/01/74-02/28/75	FY75: \$6,905	TOTAL: \$6,905
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Greeley, R.	HQ-SM/Bryson, R. P.	32-Geological Sci
Schultz, P. H.		
(10-810 383-20-01)		

NAS 2-6558 University of Southern California 1642
Pioneer F/G analysis of ultraviolet experiment

<i>Period</i>	<i>Obligations</i>	
09/01/71-06/30/75	FY75: \$251,695	TOTAL: \$551,627
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Judge, D. L.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	
(21-840 811-22-00)	(21-850 879-11-00)	

NAS 2-7969 University of Southern California 1643
Pioneer F/G data analysis

<i>Period</i>	<i>Obligations</i>	
12/05/73-06/30/75	FY75: \$84,865	TOTAL: \$114,865
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Intriligator, D. S.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	
(21-840 811-22-00)		

NAS 3-17857 University of Southern California 1644
Jet noise basic research program

<i>Period</i>	<i>Obligations</i>	
06/29/73-06/28/74	FY75: \$27,290	TOTAL: \$27,290
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Laufer, J.	LERC/Dorsch, R. G.	41-Aero Engr
(22-704 501-00-00)		

NAS 5-21505 University of Southern California 1645
Advanced data compression experiments

<i>Period</i>	<i>Obligations</i>	
06/04/70-12/27/75	FY75: \$74,300	TOTAL: \$294,880
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Davison, L. D.	GSFC/Kutz, R. L.	45-Elec Engr
(51-601 645-40-05)	(51-630 369-06-06)	(51-680 175-31-43)

NAS 8-28305 University of Southern California 1646
Skylab experiment mixed 111-2V crystal growth analysis effort

<i>Period</i>	<i>Obligations</i>	
10/19/72-10/15/75	FY75: \$15,000	TOTAL: \$62,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wilcox, W. R.	MSFC/Adams, W. R.	19-Phys Sci, NEC
	MSFC/Davidson, M. C.	
(62-960 948-90-95)	(62-960 948-00-00)	

NAS 8-29847 University of Southern California 1647
Study of analytics of crystal growth in space

<i>Period</i>	<i>Obligations</i>	
06/05/73-12/17/75	FY75: \$25,000	TOTAL: \$70,030
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wilcox, W. R.	MSFC/Ruff, R. C.	13-Physics
	MSFC/Facemire, B. R.	
(62-630 179-12-23)		

**NASA'S UNIVERSITY PROGRAM
COLORADO (Continued)**

NAS 1-12106 Colorado State University 1661
Development of data test sets & simulation models for long term zonal earth energy budget experiment

<i>Period</i>	<i>Obligations</i>	
02/06/73-03/31/75	FY75: \$20,000	TOTAL: \$89,732
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Vonder Haar, T. H.	LARC/Sweet, G. E.	31-Atmos Sci
	LARC/Woerner, C. V.	
(23-680 175-21-32)	(23-680 160-44-9X)	

NAS 1-13501 Colorado State University 1662
Design study of a stabilized flat plate wide-field-of-view radiosity detector

<i>Period</i>	<i>Obligations</i>	
07/18/74-07/21/75	FY75: \$55,985	TOTAL: \$55,985
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Vonder Haar, T. H.	LARC/Cooper, J. E.	31-Atmos Sci
(23-680 175-21-32)	(23-680 683-74-18)	

NAS 2-6615 Colorado State University 1663
Study plant tumor tissues on clinostats & in space environment

<i>Period</i>	<i>Obligations</i>	
09/10/71-12/10/75	FY75: \$52,179	TOTAL: \$110,279
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Baker, R.	ARC/Tremor, J. W.	59-Life Sci, NEC
	ARC/Johnson, R.	
(21-970 970-24-01)	(21-970 970-21-61)	(21-980 975-00-00)

NAS 5-22372 Colorado State University 1664
Solar energy microclimate study

<i>Period</i>	<i>Obligations</i>	
05/12/75-11/12/76	FY75: \$30,000	TOTAL: \$30,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Vonder Haar, T. H.	GSFC/Thekaekara, M.	39-Env Sci, NEC
(51-400 647-20-01)		

NAS 8-28590 Colorado State University 1665
Feasibility of remote evaporation and precipitation estimates

<i>Period</i>	<i>Obligations</i>	
05/18/72-06/30/74	FY75:	TOTAL: \$99,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sadeh, W. Z.	MSFC/Turner, R. E.	39-Env Sci, NEC
Ruff, T. F.		
(62-950 951-00-00)	(62-910 933-50-00)	

NAS 8-29583 Colorado State University 1666
Wind tunnel investigation of wakes downwind of buildings and natural obstacles

<i>Period</i>	<i>Obligations</i>	
05/23/73-10/31/75	FY75: \$11,107	TOTAL: \$96,124
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cermak, J. E.	MSFC/Cliff, W. C.	44-Civil Engr
Peterka, J. A.	MSFC/Camp, D. W.	
(62-702 505-08-10)		

NAS 8-30250 Colorado State University 1667
Application of electro-hydrodynamic phenomena to space processing

<i>Period</i>	<i>Obligations</i>	
02/01/74-02/28/75	FY75:	TOTAL: \$15,001
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jones, T. B.	MSFC/Berge, L. H.	45-Elec Engr
Wilmsen, C. W.	MSFC/Wuenschel, H. E.	
(62-630 179-15-10)		

NAS 8-31237 Colorado State-University 1668
Turbulence model - statistical simulation

<i>Period</i>	<i>Obligations</i>	
02/14/75-03/05/76	FY75: \$21,977	TOTAL: \$21,977
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Winn, C. B.	MSFC/Cliff, W. C.	46-Mech Engr
Johnson, G. R.	MSFC/Fichtl, G. H.	
(62-920 989-13-00)		

NAS 8-31347 Colorado State University 1669
Assessment of geophysical flows for zero-gravity simulation

<i>Period</i>	<i>Obligations</i>	
05/01/75-05/01/76	FY75: \$25,000	TOTAL: \$25,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Winn, C. B.	MSFC/Fichtl, G. H.	49-Engr, NEC
Thompson, E.	MSFC/Cliff, W. C.	
(62-680 175-11-71)		

NAS 9-14467 Colorado State University 1670
Modeling of wheat signatures for signature extension

<i>Period</i>	<i>Obligations</i>	
11/15/74-11/14/75	FY75: \$32,950	TOTAL: \$32,950
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Smith, J. A.	JSC/Barnett, T. L.	39-Env Sci, NEC
	JSC/Potter, A. E.	
(72-680 658-10-20)		

NCA 2-65502 Colorado State University 1671
Experimental turbulence modeling

<i>Period</i>	<i>Obligations</i>	
12/01/74-06/30/75	FY75: \$10,260	TOTAL: \$10,260
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sandborn, V. A.	ARC/Zill, L. P.	41-Aero Engr
(21-702 505-06-13)		

NCA 2-65503 Colorado State University 1672
Theoretical investigations of frequency up-conversion of infrared laser radiation by diatomic molecules

<i>Period</i>	<i>Obligations</i>	
01/01/75-12/31/75	FY75: \$5,260	TOTAL: \$5,260
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
She, C. Y.	ARC/Zill, L. P.	13-Physics
(21-704 506-00-00)	(21-704 506-25-32)	

NGL 06-002-063 Colorado State University 1673
Stress intensity factors for surface flawed fracture specimens

<i>Period</i>	<i>Obligations</i>	
02/17/69-01/01/75	FY75:	TOTAL: \$143,408
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Smith, F. W.	LERC/Miscenic, J. A.	46-Mech Engr
(22-704 502-22-03)		

NGR 06-002-075 Colorado State University 1674
Metabolic effects of artificial environment

<i>Period</i>	<i>Obligations</i>	
10/18/68-11/01/75	FY75: \$30,000	TOTAL: \$258,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jordan, J. P.	ARC/Holton, E. M.	51-Biology
Schatte, C. L.		
(21-970 970-21-61)	(53-970 970-71-61)	

**NASA'S UNIVERSITY PROGRAM
COLORADO (Continued)**

NGR 06-002-095 Colorado State University 1675
Combustion instability with partial length acoustic lines
Period Obligations
12/02/69-08/31/76 FY75: TOTAL: \$230,013
Prtn. Invest. NASA Tech. Officer CASE Category
Mitchell, C. E. LERC/Priem, R. J. 42-Astro Engr
(22-704 502-04-25)

NGR 06-002-098 Colorado State University 1676
Atmospheric transport processes as evaluated from Nimbus III satellite data
Period Obligations
04/13/70-01/06/75 FY75: \$40,000. TOTAL: \$237,787
Prtn. Invest. NASA Tech. Officer CASE Category
Reiter, E. R. GSFC/Theon, J. S. 31-Atmos Sci
Vonder Haar, T. H.
Cox, S. K.
(51-680 175-61-41) (51-680 160-44-51)

NGR 06-002-102 Colorado State University 1677
Studies of radiation measurements from polar and geosynchronous satellites
Period Obligations
09/23/70-10/31/75 FY75: \$60,000 TOTAL: \$281,000
Prtn. Invest. NASA Tech. Officer CASE Category
Vonder Haar, T. H. GSFC/Wexler, R. 31-Atmos Sci
(51-680 175-61-41) (51-680 160-44-51)

NGR 06-002-112 Colorado State University 1678
An experimental investigation of hollow cathode discharge start-up and operation
Period Obligations
12/21/70-11/30/75 FY75: \$50,547 TOTAL: \$237,789
Prtn. Invest. NASA Tech. Officer CASE Category
Wilbur, P. J. LERC/Kerslake, W. R. 46-Mech Engr
(22-704 506-22-40) (22-704 502-04-01)

NGR 06-002-127 Colorado State University 1679
Investigation of electrohydrodynamic heat pipes
Period Obligations
04/29/71-11/01/75 FY75: \$18,244 TOTAL: \$56,063
Prtn. Invest. NASA Tech. Officer CASE Category
Loehrke, R. I. ARC/Debs, R. J. 46-Mech Engr
Jones, T. B. ARC/Kirkpatrick, J. P.
(21-704 506-16-31) (21-742 124-00-00)

NGR 06-002-128 Colorado State University 1680
Effect of cosmic radiation
Period Obligations
08/31/72-08/31/75 FY75: \$74,300 TOTAL: \$204,300
Prtn. Invest. NASA Tech. Officer CASE Category
Lett, J. T. JSC/Hoffman, R. A. 51-Biology
(72-970 970-51-63)

NGR 06-002-147 Colorado State University 1681
Theoretical investigations on plasma processes in the Kaufman thruster
Period Obligations
04/14/72-08/31/76 FY75: TOTAL: \$82,050
Prtn. Invest. NASA Tech. Officer CASE Category
Wilhelm, H. E. LERC/Serafini, J. S. 42-Astro Engr
(22-704 502-04-01)

NGR 06-002-159 Colorado State University 1682
Bulk properties of atomic triplet hydrogen & high pressure equation of state for solid hydrogen
Period Obligations
12/04/72-07/19/75 FY75: \$26,371 TOTAL: \$56,670
Prtn. Invest. NASA Tech. Officer CASE Category
Etters, R. D. LERC/Danilowicz, R. L. 13-Physics
(22-704 506-21-41) (22-704 502-04-35)

NGR 06-002-191 Colorado State University 1683
Impact studies on computer needs for a whole earth dynamical model
Period Obligations
05/01/74-09/30/75 FY75: \$7,000 TOTAL: \$16,000
Prtn. Invest. NASA Tech. Officer CASE Category
Thompson, E. G. GSFC/Carpenter, L. H. 32-Geological Sci
Winn, C. B. GSFC/Smith, D. E.
(51-630 161-02-01)

NSG 1023 Colorado State University 1684
Aircraft measurements and analysis of severe storms
Period Obligations
04/01/74-01/31/76 FY75: \$370,813 TOTAL: \$400,813
Prtn. Invest. NASA Tech. Officer CASE Category
Sinclair, P. C. LARC/Costen, R. C. 31-Atmos Sci
GSFC/Shenk, W. E.
(23-680 175-21-31) (23-680 175-21-43) (23-680 175-91-41)

NSG 1215 Colorado State University 1685
Airborne measurements of the radio emissions spectrum and environmental variables of severe storm
Period Obligations
07/01/75-06/30/76 FY75: \$26,600 TOTAL: \$26,600
Prtn. Invest. NASA Tech. Officer CASE Category
Sinclair, P. C. LARC/Costen, R. C. 31-Atmos Sci
GSFC/Levine, D. M.
(23-680 175-21-31) (23-680 175-91-41)

NSG 2009 Colorado State University 1686
Research of ultrasonic methods for hemodynamic measurements
Period Obligations
02/01/74-02/01/76 FY75: \$20,000 TOTAL: \$50,000
Prtn. Invest. NASA Tech. Officer CASE Category
Histand, M. B. ARC/Rositano, S. A. 45-Elec Engr
McLoed, F. D. ARC/McCutcheon, E. P.
Miller, C. W.
(21-970 970-23-30)

NSG 3011 Colorado State University 1687
Experimental investigations of argon and xenon ion sources
Period Obligations
07/01/74-07/31/76 FY75: TOTAL: \$50,197
Prtn. Invest. NASA Tech. Officer CASE Category
Kaufman, H. R. LERC/Mirtich, M. J. 42-Astro Engr
LERC/Byers, D. C.
(22-704 502-04-01)

NSG 3038 Colorado State University 1688
Plasma interaction between ion thruster and solar array
Period Obligations
09/01/74-07/31/76 FY75: \$15,850 TOTAL: \$15,850
Prtn. Invest. NASA Tech. Officer CASE Category
Kaufman, H. R. LERC/Domitz, S. 19-Phys Sci, NEC
Wilbur, P. J.
(22-704 506-23-30)

**NASA'S UNIVERSITY PROGRAM
COLORADO (Continued)**

NSG 3060 Colorado State University 1689
Experimental measurement of thermal energy charge-transfer cross-sections of interest in rare-gas metal-vapor lasers
Period *Obligations*
03/01/75-02/28/76 FY75: \$24,991 TOTAL: \$24,991
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Collins, G. J. LERC/Chubb, D. L. 13-Physics
LERC/Michels, C. J.
(22-704 506-22-41)

NSG 5011 Colorado State University 1690
Satellite support to weather modification
Period *Obligations*
06/15/74-11/14/75 FY75: \$24,074 TOTAL: \$59,074
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Vonder Haar, T. H. GSFC/Adler, R. F. 31-Atmos Sci
Grant, L. O.
(51-680 175-21-46) (51-680 175-61-41)

NSG 2048 Southern Colorado State College 1691
Technology research for strapdown inertial experiments
Period *Obligations*
09/15/74-09/15/75 FY75: \$65,651 TOTAL: \$65,651
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jenkins, R. B. ARC/Hruby, R. J. 41-Aero Engr
(21-702 513-53-05) (21-702 768-83-02)

NAS 2-7901 University of Colorado - Boulder 1692
Design and development of ultraviolet spectrometer
Period *Obligations*
10/29/73-12/31/74 FY75: \$48,074 TOTAL: \$81,731
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Stewart, I. ARC/Sinnott, D. 31-Atmos Sci
ARC/Hall, C. F.
(21-840 186-68-63) (21-840 186-00-00)

NAS 2-8816 University of Colorado - Boulder 1693
Design and development of a Pioneer-Venus orbiting ultraviolet spectrometer
Period *Obligations*
04/01/75-08/31/78 FY75: \$98,000 TOTAL: \$98,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Stewart, A. I. ARC/Sinnott, D. B. 19-Phys Sci, NEC
ARC/Sperans, J.
(21-840 825-20-00)

NAS 5-11363 University of Colorado - Boulder 1694
OSO-I pointed experiment hardware
Period *Obligations*
06/22/71-06/30/75 FY75: \$424,219 TOTAL: \$4,429,012
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Brunner, E. C. GSFC/Donley, J. L. 11-Astronomy
GSFC/Borrowbridge, D. R.
(51-850 821-32-00)

NAS 5-11405 University of Colorado - Boulder 1695
University of Colorado ultraviolet nitric oxide experiment for atmosphere Explorer
Period *Obligations*
03/17/71-09/30/77 FY75: \$100,000 TOTAL: \$724,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Barth, C. A. GSFC/Findlay, J. A. 31-Atmos Sci
(51-850 852-22-00)

NAS 5-20914 University of Colorado - Boulder 1696
ERTS data follow-on investigation
Period *Obligations*
02/28/75-12/28/76 FY75: \$82,035 TOTAL: \$82,035
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ives, J. D. GSFC/Broderick, J. 32-Geological Sci
(51-680 641-15-00)

NAS 5-20948 University of Colorado - Boulder 1697
ERTS follow-on investigation
Period *Obligations*
02/20/75-09/20/76 FY75: \$141,561 TOTAL: \$141,561
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Krebs, P. GSFC/Szajna, E. F. 59-Life Sci, NEC
(51-680 641-15-00)

NAS 5-22409 University of Colorado - Boulder 1698
Reduction and analysis of data from the OSO-1 high resolution ultraviolet spectrometer experiment
Period *Obligations*
06/26/75-06/25/77 FY75: \$135,000 TOTAL: \$135,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bruner, E. C. GSFC/White, R. A. 31-Atmos Sci
(51-850 821-32-00)

NAS 5-22440 University of Colorado - Boulder 1699
Planetary atmospheric dynamics program
Period *Obligations*
06/20/75-07/20/76 FY75: \$20,000 TOTAL: \$20,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hard, C. GSFC/Pirraglia, J. 31-Atmos Sci
Dickinson, R.
(51-840 185-47-57)

NAS 5-23274 University of Colorado - Boulder 1700
Development of models for physical properties of stellar chromospheres
Period *Obligations*
08/01/73-09/30/75 FY75: \$17,291 TOTAL: \$31,291
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Linsky, J. L. GSFC/Underhill, A. B. 11-Astronomy
(51-850 868-12-00) (51-850 385-41-00)

NAS 8-31378 University of Colorado - Boulder 1701
Study of the solar corona using radio observations and Skylab observations
Period *Obligations*
05/20/75-05/19/76 FY75: \$29,990 TOTAL: \$29,990
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dulk, G. A. MSFC/Bass, B. 13-Physics
MSFC/Haggard, M.
(62-850 385-38-00)

NASR 86 University of Colorado - Boulder 1702
Investigation of solar ultraviolet radiation
Period *Obligations*
11/15/61-12/06/74 FY75: \$11,592 TOTAL: \$509,015
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Reethof, G. HQ-SG/Jordan, S. D. 13-Physics
HQ-SG/Timothy, A. F.
(10-850 188-00-00) (10-850 879-00-00)

**NASA'S UNIVERSITY PROGRAM
COLORADO (Continued)**

NGL 06-003-052	University of Colorado - Boulder	1703			
Theoretical and experimental research program in physics of planetary atmospheres					
<i>Period</i>		<i>Obligations</i>			
06/28/66-06/30/77		FY75: \$342,067	TOTAL: \$3,200,014		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Barth, C. A.		HQ-SL/Fellows, R. F.	31-Atmos Sci		
		HQ-SL/Brunk, W. E.			
(10-840 185-47-83)					
NGL 06-003-057	University of Colorado - Boulder	1704			
Basic research in solar physics					
<i>Period</i>		<i>Obligations</i>			
09/05/67-08/31/76		FY75: \$75,470	TOTAL: \$663,970		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Linsky, J. L.		HQ-SG/Jordan, S. D.	13-Physics		
Cooper, J. E.					
Toomre, J.					
(10-850 188-38-53) (10-850 385-38-00)					
NGL 06-003-064	University of Colorado - Boulder	1705			
Rocket research program in the ultraviolet airglow and aurora of planetary atmospheres					
<i>Period</i>		<i>Obligations</i>			
11/30/67-08/31/77		FY75: \$130,000	TOTAL: \$1,289,122		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Barth, C. A.		HQ-SG/Dubin, M.	31-Atmos Sci		
		HQ-SL/Fellows, R. F.			
(10-850 879-11-00) (10-850 879-00-00)					
NGL 06-003-200	University of Colorado - Boulder	1706			
Application of space technology to practical problems such as those currently facing the mountain sections of the state of Colorado					
<i>Period</i>		<i>Obligations</i>			
07/11/72-04/30/78		FY75: \$125,000	TOTAL: \$425,000		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Ives, J. D.		HQ-P/Vitale, J. A.	39-Env Sci, NEC		
(10-371 340-00-00)					
NGR 06-003-069	University of Colorado - Boulder	1707			
Solar physics research					
<i>Period</i>		<i>Obligations</i>			
11/29/67-07/31/75		FY75: \$141,000	TOTAL: \$1,008,801		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Bruner, E. C.		HQ-SG/Weldon, J. M.	11-Astronomy		
		HQ-SG/Ott, E. J.			
(10-850 879-11-00)					
NGR 06-003-127	University of Colorado - Boulder	1708			
Data reduction-coordinated experiments					
<i>Period</i>		<i>Obligations</i>			
08/18/69-02/28/76		FY75: \$110,820	TOTAL: \$753,681		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Barth, C. A.		HQ-SL/Brunk, W. E.	31-Atmos Sci		
		HQ-SL/Fellows, R. F.			
(10-840 384-47-81) (10-840 384-00-00)					
NGR 06-003-176	University of Colorado - Boulder	1709			
Rocket research program in stellar ultraviolet astronomy					
<i>Period</i>		<i>Obligations</i>			
12/29/71-03/31/75		FY75:	TOTAL: \$136,255		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Lillie, C. F.		HQ-SG/Roman, N. G.	11-Astronomy		
(10-850 879-11-00)					
NGR 06-003-179	University of Colorado - Boulder	1710			
OAO-II data analysis program					
<i>Period</i>		<i>Obligations</i>			
06/07/71-06/30/75		FY75:	TOTAL: \$41,100		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Lillie, C. F.		HQ-SG/Roman, N. G.	11-Astronomy		
(10-850 385-41-00)					
NGR 06-003-181	University of Colorado - Boulder	1711			
Lunar sample analysis					
<i>Period</i>		<i>Obligations</i>			
06/24/71-01/31/76		FY75: \$23,800	TOTAL: \$108,750		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Larson, E. E.		JSC/Harris, J. W.	13-Physics		
(72-810 388-10-03)					
NGR 06-003-199	University of Colorado - Boulder	1712			
Geologic analysis of Martian surface features from Mariner 9 photography as a basis for systematic geologic mapping of Mars					
<i>Period</i>		<i>Obligations</i>			
05/24/72-10/31/75		FY75: \$7,127	TOTAL: \$32,842		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Peterson, J. E.		HQ-SL/Dwornik, S. E.	32-Geological Sci		
		HQ-SL/Holt, H. E.			
(10-840 384-50-80) (10-840 384-00-00)					
NGR 06-003-201	University of Colorado - Boulder	1713			
Analysis of data from satellite experiments					
<i>Period</i>		<i>Obligations</i>			
09/11/72-08/31/74		FY75:	TOTAL: \$206,913		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Thomas, G. E.		HQ-SL/Fellows, R. F.	31-Atmos Sci		
		HQ-SL/Brunk, W. E.			
(10-840 384-47-81) (10-840 384-00-00)					
NGR 06-003-205	University of Colorado - Boulder	1714			
Ion-implanted, epitaxially-grown ZnSe					
<i>Period</i>		<i>Obligations</i>			
10/01/72-09/30/74		FY75:	TOTAL: \$33,516		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Chernow, F.		LARC/Hutchby, J. A.	13-Physics		
		LARC/Hendricks, H. D.			
(23-704 502-23-56) (23-704 502-03-53)					
NGR 06-003-208	University of Colorado - Boulder	1715			
Energy transfer in isotropic turbulence					
<i>Period</i>		<i>Obligations</i>			
09/05/72-08/31/76		FY75: \$20,000	TOTAL: \$56,000		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Uberoi, M. S.		LERC/Deissler, R. G.	41-Aero Engr		
(22-704 506-21-53) (22-704 502-04-25)					
NGR 06-003-215	University of Colorado - Boulder	1716			
Analysis of satellite data from the magnetosphere and comparison with ground-based data					
<i>Period</i>		<i>Obligations</i>			
07/01/73-10/31/75		FY75:	TOTAL: \$29,957		
<i>Prin. Invest.</i>		<i>NASA Tech. Officer</i>	<i>CASE Category</i>		
Speiser, T. W.		HQ-SG/Calahan, H. D.	13-Physics		
(10-850 385-36-00)					

**NASA'S UNIVERSITY PROGRAM
COLORADO (Continued)**

NGR 06-003-216 University of Colorado - Boulder 1717
Physical properties of chromospheric active and quiet regions by the analysis of existing OSO-4 and OSO-6 EUV data

<i>Period</i>	<i>Obligations</i>	
11/01/73-10/31/75	FY75: TOTAL: \$24,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Linsky, J. L.	HQ-SG/Calahan, H. D.	11-Astronomy
	HQ-SG/Oertel, G. K.	

(10-850 385-38-00)

NGR 06-003-219 University of Colorado - Boulder 1718
High resolution spectrograph of large space telescope

<i>Period</i>	<i>Obligations</i>	
10/01/73-02/29/76	FY75: \$3,488 TOTAL: \$12,293	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lillie, C. F.	GSFC/Sobieski, S.	11-Astronomy
	GSFC/Meece, K. J.	

(51-850 893-78-56) (51-850 188-78-58)

NGR 06-003-222 University of Colorado - Boulder 1719
Zodiacal light rocket research program

<i>Period</i>	<i>Obligations</i>	
07/01/73-06/30/75	FY75: TOTAL: \$170,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lillie, C. F.	HQ-SG/Dubin, M.	11-Astronomy
	HQ-SG/Holtz, J. R.	

(10-850 879-11-00)

NGR 06-003-236 University of Colorado - Boulder 1720
Seventh U. S. National Congress of Applied Mechanics

<i>Period</i>	<i>Obligations</i>	
01/15/74-01/15/75	FY75: TOTAL: \$6,035	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Essenburg, F.	LERC/Hirschberg, M. H.	21-Mathematics

(22-704 501-21-21) (22-704 501-24-07)

NSG 1027 University of Colorado - Boulder 1721
Solar cells for terrestrial applications

<i>Period</i>	<i>Obligations</i>	
06/01/74-05/31/75	FY75: TOTAL: \$8,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chernow, F.	LARC/Hutchby, J. A.	19-Phys Sci, NEC
	LARC/Hendricks, H. D.	

(23-704 502-03-53)

NSG 1037 University of Colorado - Boulder 1722
Ion-implanted, epitaxially-grown ZnSe

<i>Period</i>	<i>Obligations</i>	
05/01/74-04/30/75	FY75: TOTAL: \$32,255	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chernow, F.	LARC/Hutchby, J. A.	19-Phys Sci, NEC
	LARC/Hendricks, H. D.	

(23-704 502-03-53)

NSG 1056 University of Colorado - Boulder 1723
Theory of hypersonic flight

<i>Period</i>	<i>Obligations</i>	
06/01/74-05/30/76	FY75: \$11,050 TOTAL: \$45,440	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Culp, R. D.	LARC/Rainey, R. W.	41-Aero Engr
Busemann, A.	LARC/Quiejo, M. J.	

(23-702 505-90-82)

NSG 1140 University of Colorado - Boulder 1724
Computer automation for feedback system design

<i>Period</i>	<i>Obligations</i>	
01/01/75-09/30/75	FY75: \$18,435 TOTAL: \$18,435	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Horowitz, I.	LARC/Jones, R. L.	45-Elec Engr
	LARC/Schy, A. A.	

(23-702 512-53-01)

NSG 1213 University of Colorado - Boulder 1725
Design of noninteracting flight control systems in the presence of large parameter variations and disturbances

<i>Period</i>	<i>Obligations</i>	
07/01/75-09/30/76	FY75: \$19,986 TOTAL: \$19,986	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wang, S. H.	LARC/Schy, A. A.	45-Elec Engr
Dorato, P.	LARC/Hamer, H. A.	

(23-702 512-53-01)

NSG 2055 University of Colorado - Boulder 1726
Computer control of AIRO telescopes

<i>Period</i>	<i>Obligations</i>	
11/01/74-11/01/75	FY75: \$21,450 TOTAL: \$21,450	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Webb, W.	ARC/Cameron, R. M.	11-Astronomy
Linsky, J. L.	ARC/Gillespie, C. M., Jr.	

(21-850 352-02-03)

NSG 7128 University of Colorado - Boulder 1727
Studies of X-ray ultraviolet and optical emission from galactic X-ray sources

<i>Period</i>	<i>Obligations</i>	
03/01/75-08/31/75	FY75: \$10,000 TOTAL: \$10,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McCray, R.	HQ-SG/Opp, A. G.	11-Astronomy
	HQ-SG/Lazarus, A. J.	

(10-850 188-46-59)

NSG 7130 University of Colorado - Boulder 1728
OSO-I guest investigator program

<i>Period</i>	<i>Obligations</i>	
04/01/75-06/30/75	FY75: \$30,000 TOTAL: \$30,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bruner, E. C.	HQ-SG/Jordan, S. D.	13-Physics
	HQ-SG/Timothy, A. F.	

(10-850 385-38-00)

NAS 1-13817 University of Denver 1729
Seam welding evaluation

<i>Period</i>	<i>Obligations</i>	
03/25/75-09/25/75	FY75: \$15,423 TOTAL: \$15,423	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wittman, R. H.	LARC/Bement, L.	47-Materials Engr

(23-704 502-24-41) (23-704 506-21-30)

NAS 2-8200 University of Denver 1730
Detectability of atmospheric species

<i>Period</i>	<i>Obligations</i>	
04/01/74-06/30/76	FY75: \$73,872 TOTAL: \$93,730	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Murcay, D. G.	ARC/Munoz, R. M.	13-Physics

(21-680 160-44-79) (21-850 188-37-01) (21-920 989-15-00)

**NASA'S UNIVERSITY PROGRAM
COLORADO (Continued)**

NAS 5-23190 University of Denver 1731
Construction of a 31.4 GHS parametric amplifier
Period *Obligations*
03/16/73-05/30/75 FY75: TOTAL: \$16,972
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Edrich, J. GSFC/Hobbs, R. W. 13-Physics
(51-850 188-00-0)

NASW 2607 University of Denver 1732
The collection and analysis of information relating to technology transfer and application
Period *Obligations*
03/12/74-01/13/75 FY75: \$120,000 TOTAL: \$220,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Unavailable HQ-KT/Ault, L. A. 75-Political Sci
(10-250 141-00-0) (10-250 141-94-0)

NASW 2766 University of Denver 1733
Program for transfer research and impact studies
Period *Obligations*
02/01/75-01/31/76 FY75: \$225,000 TOTAL: \$225,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Freeman, J. E. HQ-KT/Ault, L. A. 99-Multi-Discip
(10-250 141-94-0)

NGR 06-004-058 University of Denver 1734
Study of hydromagnetic disturbances in the geomagnetic field at satellite altitudes
Period *Obligations*
05/02/68-10/31/75 FY75: \$10,000 TOTAL: \$128,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Patel, V. L. HQ-SG/Berko, F. W. 13-Physics
HQ-SG/Schmerling, E. R.
(10-850 385-36-00) (10-850 385-00-00)

NGR 06-004-060 University of Denver 1735
Study of physical processes which govern the dynamics of geomagnetically trapped radiation
Period *Obligations*
05/08/68-11/31/75 FY75: \$15,000 TOTAL: \$168,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Roederer, J. G. HQ-SG/Berko, F. W. 13-Physics
HQ-SG/Schmerling, E. R.
(10-850 385-36-00) (10-850 385-00-00)

NGR 06-004-123 University of Denver 1736
Study of geomagnetic storms
Period *Obligations*
10/10/73-04/30/75 FY75: TOTAL: \$19,867
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Patel, V. L. HQ-SG/Calahan, H. D. 13-Physics
(10-850 385-36-00)

NGR 06-004-125 University of Denver 1737
Nitrogen management in solid waste management systems in space cabin atmospheric environments
Period *Obligations*
01/22/73-04/01/76 FY75: \$19,345 TOTAL: \$56,355
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ross, L. W. ARC/Quattrone, P. D. 12-Chemistry
(21-970 970-22-21)

NGR 06-004-131 University of Denver 1738
Measurement of atmospheric emission with a balloon borne spectrometer system
Period *Obligations*
01/01/74-10/31/74 FY75: TOTAL: \$38,373
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Murcay, D. G. LARC/Russell, J. M., III 31-Atmos Sci
(23-680 638-10-00)

NGR 06-004-133 University of Denver 1739
Infrared observation of comet Kohoutek
Period *Obligations*
12/10/73-09/09/74 FY75: TOTAL: \$11,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lesh, J. R. GSFC/Hobbs, R. W. 11-Astronomy
GSFC/Maran, S. P.
(51-840 196-41-53) (51-840 196-00-00)

NSG 5004 University of Denver 1740
Research study of variable stars using data from OAO-2
Period *Obligations*
05/01/74-04/30/75 FY75: TOTAL: \$7,449
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lesh, J. R. GSFC/Kupperian, J. E. 11-Astronomy
(51-850 831-43-00)

NSG 5069 University of Denver 1741
Study of Cephei variable stars and line-profile variations in Cephei stars
Period *Obligations*
07/01/75-06/30/76 FY75: \$11,517 TOTAL: \$11,517
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lesh, J. R. GSFC/Kupperian, J. E. 11-Astronomy
(51-850 831-42-00)

CONNECTICUT

NGR 07-010-002 Fairfield University 1742
Investigation of energy deposition processes in the upper atmosphere, and the interaction between the mesosphere and the thermosphere
Period *Obligations*
04/24/68-09/30/75 FY75: TOTAL: \$49,435
Prin. Invest. *NASA Tech. Officer* *CASE Category*
McElaney, J. H. GSFC/Heath, D. F. 31-Atmos Sci
(51-680 607-00-00) (51-680 160-44-67)

NGR 07-001-004 University of Bridgeport 1743
Cutout reinforcement of stiffened cylindrical shells
Period *Obligations*
09/10/73-09/30/75 FY75: \$7,000 TOTAL: \$12,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Palazotto, A. N. LARC/Williams, J. G. 41-Aero Engr
LARC/Anderson, M. S.
(23-702 505-02-51)

**NASA'S UNIVERSITY PROGRAM
CONNECTICUT (Continued)**

NGR 07-004-166 Yale University 1758
Nonhomogeneous accumulation origin of pallasites and its bearing
on models of lunar and planetary formation
Period *Obligations*
06/15/73-02/29/76 FY75: \$11,294 TOTAL: \$37,182
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Turekian, K. K. HQ-SM/Kosofsky, L. J.32-Geological Sci
HQ-SM/Roberson, F. I.
(10-810 195-20-04) (10-810 195-00-00)

DELAWARE

NGR 08-002-001 Delaware State College 1759
Research on the specific heat of platinum
Period *Obligations*
09/25/69-11/30/75 FY75: TOTAL: \$24,767
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Helmy, E. M. HQ-P/Pohly, J. G. 13-Physics
(10-371 340-00-00) (10-370 183-00-00)

NGR 08-002-003 Delaware State College 1760
Procedure used in measuring bacterial titers in urine samples by
the luciferase assay for ATP
Period *Obligations*
01/13/72-01/14/74 FY75: TOTAL: \$38,684
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bush, V. N. GSFC/Picciolo, G. L. 51-Biology
(51-250 141-93-02) (10-371 340-00-00)

NGR 08-002-005 Delaware State College 1761
Research on the photo detachment cross section and threshold
energy of negative ions in carbon dioxide
Period *Obligations*
03/16/73-09/30/75 FY75: \$13,912 TOTAL: \$36,017
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Helmy, E. M. GSFC/Aikin, A. C. 13-Physics
Woo, S. B.
(51-371 340-00-00) (10-371 340-00-00)

NSG 5007 Delaware State College 1762
Effect of the physiological state of bacterial cells on the
determination of bacterial titer in urine samples by the luciferase
assay for ATP
Period *Obligations*
07/15/74-07/14/75 FY75: \$33,060 TOTAL: \$33,060
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bush, V. N. GSFC/Picciolo, G. L. 12-Chemistry
(51-371 340-00-00)

NAS 1-12304 University of Delaware 1763
Skylab earth resources experiment package application to
ecological, geological and oceanographic investigation of Delaware
Bay
Period *Obligations*
06/05/73-11/18/75 FY75: TOTAL: \$78,050
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Klemas, V. LARC/Johnson, R.W. 39-Env Sci, NEC
Jordan, R. R.
Kinsman, B.
(23-960 948-63-85) (23-680 177-91-00)

NAS 5-20983 University of Delaware 1764
ERTS data follow-on investigation
Period *Obligations*
03/05/75-01/05/77 FY75: \$48,690 TOTAL: \$48,690
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Klemas, V. GSFC/Crump, E. W. 33-Oceanography
(51-680 641-15-00)

NGR 08-001-029 University of Delaware 1765
Lunar sample analysis
Period *Obligations*
02/22/71-07/31/75 FY75: TOTAL: \$38,780
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Glass, B. P. JSC/Harris, J. W. 13-Physics
(72-910 914-40-00)

NSG 1149 University of Delaware 1766
Determination of spectral reflectance signatures of coastal
pollutants
Period *Obligations*
02/10/75-02/09/76 FY75: \$30,290 TOTAL: \$30,290
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Klemas, V. LARC/Collins, V. G. 39-Env Sci, NEC
Philpot, W. LARC/Wineman, A. R.
(23-680 160-75-98) (23-680 176-24-31) (23-680 176-53-32)

DISTRICT OF COLUMBIA

NAS 1-12209 The American University 1767
Analytical investigation of data from Skylab/Earth Resources
Experiment Package (EREP) in wetlands areas
Period *Obligations*
04/06/73-07/15/75 FY75: TOTAL: \$54,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Anderson, R. R. LARC/Johnson, R. W. 39-Env Sci, NEC
LARC/Whitlock, C. H.
(23-960 948-63-85)

NAS 5-21970 The American University 1768
Study of ERTS imagery of West African countries
Period *Obligations*
10/05/73-02/04/75 FY75: TOTAL: \$87,700
Prin. Invest. *NASA Tech. Officer* *CASE Category*
MacLeod, N. H. GSFC/Schubert, J. 39-Env Sci, NEC
(51-680 176-52-41) (51-680 177-42-41) (51-680 641-14-00)

NGR 09-003-014 The American University 1769
Studies of magnetic semiconductors
Period *Obligations*
03/28/69-05/31/74 FY75: TOTAL: \$121,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cullen, E. LARC/Long, E. R., Jr. 45-Elec Engr
(23-704 502-01-03) (10-740 129-00-00) (25-740 129-00-00)

**NASA'S UNIVERSITY PROGRAM
DISTRICT OF COLUMBIA (Continued)**

NGR 09-005-022 Catholic University 1770
Genetic studies of hydrogen bacteria & their application to biological life support systems
Period Obligations
05/04/65-04/01/76 FY75: TOTAL: \$162,294
Prin. Invest. NASA Tech. Officer CASE Category
Decicco, B. T. HQ-MM/Saunders, J. F. 51-Biology
HQ-MM/Coburn, K. R.
(10-870 189-00-00)

NGR 09-005-063 Catholic University 1771
Interaction of the solar wind with the moon
Period Obligations
04/15/69-11/31/75 FY75: \$37,500 TOTAL: \$141,500
Prin. Invest. NASA Tech. Officer CASE Category
Whang, Y. C. HQ-SG/Berko, F. W. 13-Physics
HQ-SG/Schmerling, E. R.
(10-850 385-36-00) (10-850 385-00-00)

NGR 09-005-076 Catholic University 1772
Experimental study on weak turbulence
Period Obligations
11/20/69-12/31/73 FY75: TOTAL: \$11,984
Prin. Invest. NASA Tech. Officer CASE Category
Ling, S. C. LERC/Deissler, R. G. 13-Physics
(22-740 129-00-00)

NGR 09-005-077 Catholic University 1773
Detector development for the study of high energy cosmic rays
Period Obligations
09/01/71-02/29/76 FY75: \$35,000 TOTAL: \$179,273
Prin. Invest. NASA Tech. Officer CASE Category
Crannell, H. GSFC/Fichtel, C. E. 12-Chemistry
(51-850 188-46-57) (51-850 188-46-64)

NGR 09-005-099 Catholic University 1774
Experimental study of the structure of turbulence with intermediate range of Reynolds number
Period Obligations
09/19/72-06/30/76 FY75: TOTAL: \$15,640
Prin. Invest. NASA Tech. Officer CASE Category
Ling, S. C. LERC/Deissler, R. G. 41-Aero Engr
(22-704 502-04-25)

NGR 09-005-103 Catholic University 1775
Kinetics and mechanism of the reactions of O(3p) and H atoms and Ch3Cn and other nitriles
Period Obligations
07/01/73-08/31/76 FY75: \$10,000 TOTAL: \$34,867
Prin. Invest. NASA Tech. Officer CASE Category
Timmons, R. B. GSFC/Stief, L. J. 12-Chemistry
(51-840 185-47-55) (51-850 188-45-51)

NGT 09-005-093 Catholic University 1776
A summer faculty fellowship program in research
Period Obligations
12/08/71-03/31/74 FY75: TOTAL: \$211,173
Prin. Invest. NASA Tech. Officer CASE Category
Fang, B. T. HQ-P/Carter, C. H. 49-Engr, NEC
(10-371 340-00-00)

NSG 5066 Catholic University 1777
Research of solar hard X-rays and gamma-rays
Period Obligations
05/01/75-04/30/76 FY75: \$14,825 TOTAL: \$14,825
Prin. Invest. NASA Tech. Officer CASE Category
Wernitz, C. GSFC/Dennis, B. R. 13-Physics
(51-850 188-38-53)

NGR 09-053-002 District of Columbia Teachers College 1778
Liquid surface sensing capability of polarized optical techniques
Period Obligations
08/01/73-07/31/74 FY75: TOTAL: \$13,500
Prin. Invest. NASA Tech. Officer CASE Category
Curtis, W. C. WFC/Holland, A. C. 19-Phys Sci, NEC
WFC/Spinak, A. D.
(53-371 340-00-00)

NGR 09-053-003 District of Columbia Teachers College 1779
Investigation of problems associated with solid encapsulation of high voltage electronic assemblies
Period Obligations
04/15/74-04/14/76 FY75: \$20,864 TOTAL: \$42,359
Prin. Invest. NASA Tech. Officer CASE Category
Bever, R. S. GSFC/Westrom, J. L. 39-Env Sci, NEC
GSFC/Pasciutti, E. R.
(51-371 340-00-00)

NGR 09-050-001 Federal City College 1780
Study of detectors for extremely relativistic particles
Period Obligations
10/07/69-04/30/77 FY75: \$12,629 TOTAL: \$209,790
Prin. Invest. NASA Tech. Officer CASE Category
Whiteside, H. GSFC/McDonald, F. B. 13-Physics
Rogers, E. H., Jr. GSFC/Ormes, J. F.
(51-850 188-45-53) (51-850 188-46-56) (51-371 340-00-00)

NGR 09-050-003 Federal City College 1781
Fundamental and analytical investigations of mechanisms and phenomena related to spacecraft electrochemical devices
Period Obligations
10/07/69-06/30/76 FY75: \$51,014 TOTAL: \$147,476
Prin. Invest. NASA Tech. Officer CASE Category
Nottingham, W. C. GSFC/Webster, W.H., Jr. 11-Astronomy
GSFC/Ford, F. E.
(51-030 697-00-00) (51-371 340-00-00) (51-500 311-07-13)

NGR 09-050-010 Federal City College 1782
Laboratory investigation of different interstellar bands based on the spectra of tetrabenzoporphin
Period Obligations
01/25/72-09/30/74 FY75: TOTAL: \$18,000
Prin. Invest. NASA Tech. Officer CASE Category
McDowell, H. HQ-P/Pohly, J. G. 11-Astronomy
(10-850 188-00-00) (10-371 340-00-00)

NGR 09-050-013 Federal City College 1783
Applications of medical information management systems
Period Obligations
08/01/72-07/16/74 FY75: TOTAL: \$25,520
Prin. Invest. NASA Tech. Officer CASE Category
Friedman, C. GSFC/Alterescu, S. 52-Clinical Med
GSFC/Friedman, D. S.
(51-371 340-00-00) (51-620 402-00-00)

**NASA'S UNIVERSITY PROGRAM
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NGR 09-050-019 Federal City College 1784
Determination of heavy metals in sediments and benthic species
in relation to nuclear power plant operation
Period *Obligations*
02/18/74-04/30/76 FY75: \$24,827 TOTAL: \$49,759
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Phelps, H. L. GSFC/Nava, D. F. 39-Env Sci, NEC
(51-371 340-00-00)

NGR 09-050-020 Federal City College 1785
Application of Alexeev's theorem to two-body perturbed
problems
Period *Obligations*
03/01/74-02/29/76 FY75: \$12,783 TOTAL: \$23,056
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bakshi, J. S. GSFC/Fuchs, A. J. 21-Mathematics
(51-371 340-00-00)

NSG 5003 Federal City College 1786
Characteristic functions and their applications in mathematical
statistics
Period *Obligations*
08/01/74-08/01/75 FY75: \$20,855 TOTAL: \$20,855
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Johnson, E. S. GSFC/Lancaster, E. R. 21-Mathematics
(51-371 340-00-00)

NSG 5019 Gallaudet College 1787
Investigations of use of speech modulated white noise to
differentiate hearers and feelers among listeners
Period *Obligations*
08/26/74-06/26/75 FY75: \$6,000 TOTAL: \$6,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tobin, H. GSFC/Chen, W. 52-Clinical Med
GSFC/Friedman, D. S.
(51-250 141-95-02)

NAS 5-20843 George Washington University 1788
A study: 'Outlook for Space'
Period *Obligations*
10/09/74-06/08/75 FY75: \$25,000 TOTAL: \$25,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Marney, M. C. HQ-ET/Rosenberg, J. D. 73-History
Priscoli, J. D.
(51-030 043-00-00)

NASW 2587 George Washington University 1789
To conduct the 38th Meeting of the Structures and Materials
Panel Advisory Group
Period *Obligations*
04/11/74-04/30/74 FY75: TOTAL: \$9,719
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Unavailable HQ-RW/Maltz, J. 49-Engr, NEC
(10-704 501-21-20) (10-704 501-00-00)

NASW 2768 George Washington University 1790
Operation of a scientific communication system for planetary
quarantine
Period *Obligations*
01/01/75-12/31/75 FY75: \$54,974 TOTAL: \$54,974
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Unavailable HQ-SL/Hall, L. B. 59-Life Sci, NEC
(10-840 193-58-63)

NGL 09-010-030 George Washington University 1791
Multidisciplinary program of policy studies in science and
technology
Period *Obligations*
09/09/66-08/31/75 FY75: TOTAL: \$1,737,628
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mayo, A. L. HQ-P/Morris, J. D. 79-Soc Sci, NEC
(10-370 183-00-00) (10-250 143-00-00) (10-980 981-60-00)

NGL 09-010-053 George Washington University 1792
Research in space-related areas in engineering and applied
science
Period *Obligations*
12/18/68-08/31/77 FY75: \$150,000 TOTAL: \$1,050,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Anderson, A. F. 49-Engr, NEC
(23-030 997-00-00) (23-680 638-00-00) (23-702 768-00-00)

NGR 09-010-064 George Washington University 1793
Research in acoustics at the NASA Langley Research Center
Period *Obligations*
01/29/70-01/31/76 FY75: \$187,070 TOTAL: \$1,009,518
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Margolis, K. 41-Aero Engr
(23-704 504-09-11) (23-702 505-03-12) (23-702 505-10-26)

NGR 09-010-074 George Washington University 1794
Programs of research in flight sciences
Period *Obligations*
04/01/71-05/31/76 FY75: \$120,800 TOTAL: \$740,600
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Mulac, R. W. 41-Aero Engr
(23-702 505-90-82) (23-702 505-10-41) (23-704 501-26-04)

NGR 09-010-078 George Washington University 1795
Research programs in structures and dynamics
Period *Obligations*
01/06/72-02/27/76 FY75: \$164,600 TOTAL: \$547,600
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Anderson, R. A. 41-Aero Engr
LARC/Leonard, R. W.
(23-702 505-02-51) (23-702 505-10-26) (23-702 510-54-01)

NGR 09-010-085 George Washington University 1796
Aircraft noise reduction research
Period *Obligations*
02/21/73-08/31/75 FY75: \$63,400 TOTAL: \$213,400
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Margolis, K. 41-Aero Engr
(23-704 504-09-11) (23-702 505-06-23) (23-704 501-29-11)

NGR 09-010-090 George Washington University 1797
International ultraviolet Explorer attitude control research
Period *Obligations*
02/01/73-01/31/74 FY75: TOTAL: \$25,770
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kahn, W. K. GSFC/Moore, J. V. 49-Engr, NEC
(51-850 878-21-00)

**NASA'S UNIVERSITY PROGRAM
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NGR 09-011-052 **Howard University** **1812**
Isophotometry of comets
Period *Obligations*
05/30/73-09/15/74 **FY75:** **TOTAL: \$15,800**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kumar, C. K. **HQ-P/Pohly, J. G.** **11-Astronomy**
(10-371 340-00-00)

NGR 09-011-053 **Howard University** **1813**
Three-dimensional motion and stability of rotating space station-cable-counter-weight configuration
Period *Obligations*
05/09/73-05/15/75 **FY75:** **TOTAL: \$37,814**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bainum, P. M. **HQ-MT/Huff, V. N.** **46-Mech Engr**
(10-371 340-00-00)

NGR 09-011-055 **Howard University** **1814**
Investigations of noninvasive ECG systems
Period *Obligations*
09/01/74-12/31/75 **FY75: \$18,972** **TOTAL: \$18,972**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Fischmann, E. J. **GSFC/Chen, W.** **52-Clinical Med**
Miller, W. **GSFC/Friedman, D. S.**
Yagelovich, J.
(51-371 340-00-00)

NGR 09-011-056 **Howard University** **1815**
Investigative measurements of magnetic field in comet Kohoutek
Period *Obligations*
12/01/73-11/30/74 **FY75:** **TOTAL: \$18,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kumar, C. K. **GSFC/Hobbs, R. W.** **11-Astronomy**
GSFC/Maran, S. P.
(51-371 340-00-00)

NGR 09-011-057 **Howard University** **1816**
Electron spectroscopy
Period *Obligations*
04/01/74-03/31/76 **FY75: \$9,000** **TOTAL: \$24,300**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tsang, T. **GSFC/Yin, L. I.** **13-Physics**
GSFC/Adler, I.
(51-371 340-00-00)

NGT 09-011-051 **Howard University** **1817**
Undergraduate research participation program for 10 students
Period *Obligations*
01/01/73-03/31/75 **FY75:** **TOTAL: \$72,508**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Deloatch, E. M. **HQ-P/Carter, C. H.** **59-Life Sci, NEC**
(10-371 340-00-00)

NGT 09-011-058 **Howard University** **1818**
National aerospace fellowship program
Period *Obligations*
06/01/74-05/31/76 **FY75: \$14,000** **TOTAL: \$28,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cox, E. L. **HQ-P/Pohly, J. G.** **49-Engr, NEC**
HQ-U/Jenkins, H. G.
(10-030 010-00-00)

NSG 1130 **Howard University** **1819**
Weight minimization of a large area expandable space structure with respect to a minimum allowable natural frequency
Period *Obligations*
12/09/74-12/08/75 **FY75: \$26,000** **TOTAL: \$26,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Broome, T. H. **LARC/Kruszewski, E. T.** **44-Civil Engr**
(23-371 340-00-00)

NSG 1181 **Howard University** **1820**
Dynamics of spin stabilized spacecraft with movable appendages
Period *Obligations*
05/16/75-05/15/76 **FY75: \$27,516** **TOTAL: \$27,516**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bainum, P. M. **LARC/Martz, C. W.** **41-Aero Engr**
(23-371 340-00-00)

NSG 5016 **Howard University** **1821**
Investigations of MIMS applications
Period *Obligations*
09/01/74-09/30/75 **FY75: \$19,540** **TOTAL: \$19,540**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Herson, J. **GSFC/Alterescu, S.** **53-Other Medical**
GSFC/Friedman, D. S.
(51-371 340-00-00)

NSG 5021 **Howard University** **1822**
Oh and Nh emission studies of comet Kohoutek
Period *Obligations*
11/01/74-08/31/75 **FY75: \$13,599** **TOTAL: \$13,599**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kumar, C. K. **GSFC/Maran, S. P.** **11-Astronomy**
(51-371 340-00-00)

NSG 9010 **Howard University** **1823**
Theoretical evaluation of linear kalman filtering techniques for advanced mission state determination
Period *Obligations*
07/01/74-08/31/75 **FY75:** **TOTAL: \$15,960**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Choudhury, A. K. **JSC/Savely, R. T.** **45-Elec Engr**
(72-371 340-00-00)

NAS 5-22383 **Washington Technical Institute** **1824**
Electronics fabrication studies
Period *Obligations*
06/03/75-06/03/76 **FY75: \$19,599** **TOTAL: \$19,599**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Boyd, P. **GSFC/Ehrmann, C. H.** **45-Elec Engr**
GSFC/Smith, R. L.
(51-371 340-00-00) (51-840 802-33-00)

NCA 5-40 **Washington Technical Institute** **1825**
Study the evolution of solar active regions
Period *Obligations*
06/16/75-09/16/75 **FY75: \$4,500** **TOTAL: \$4,500**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kasten, A. **GSFC/Hobbs, R. W.** **11-Astronomy**
(51-850 188-38-52)

**NASA'S UNIVERSITY PROGRAM
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NGR 09-059-002 Washington Technical Institute 1826
Electronics fabrication studies

<i>Period</i>	<i>Obligations</i>	
01/15/74-12/31/75	FY75: TOTAL: \$42,240	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Brach, P. (51-371 340-00-00)	GSFC/Ehrmann, C. H. (51-850 188-00-00)	45-Elec Engr

NAS10-8399 Florida Institute of Technology 1832
Hypergolic propellants liquid and vapor disposal study

<i>Period</i>	<i>Obligations</i>	
08/08/73-09/07/75	FY75: \$69,774 TOTAL: \$144,774	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bowman, T. E. Newman, R. W. (76-980 909-64-36)	KSC/Franks, H. H. KSC/Dobson, J. L. (76-980 909-64-09)	43-Chem Engr

FLORIDA

NGR 10-022-001 Bethune - Cookman College 1827
A study of lagoonal and estuarine processes through the beneficial disposal of solid waste

<i>Period</i>	<i>Obligations</i>	
07/26/72-10/31/75	FY75: \$24,996 TOTAL: \$71,322	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Poondi, P. Marlins, J. C. (76-371 340-00-00)	KSC/Hammond, T. M. (10-980 908-94-00)	39-Env Sci, NEC

NGR 10-015-008 Florida Institute of Technology 1833
Study of lagoonal and estuarine ecological processes

<i>Period</i>	<i>Obligations</i>	
09/03/74-12/31/75	FY75: \$68,294 TOTAL: \$233,224	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nevin, T. A. Lasater, J. A. Dubbelday, P. S. (76-950 953-00-00)	KSC/Lee, W. H. (76-980 909-64-47)	39-Env Sci, NEC

NGR 10-010-002 Florida A&M University 1828
Development of methods for analysis of hydrocarbons in partially purified waste water

<i>Period</i>	<i>Obligations</i>	
60/17/30-01/31/76	FY75: \$17,556 TOTAL: \$41,781	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cottrell, P. T. (76-371 340-00-00)	KSC/Schehl, T. A. (10-371 340-00-00)	39-Env Sci, NEC

NSG 5038 Florida Institute of Technology 1834
Correlation of the earth's rotation rate and the secular change of the geomagnetic fields

<i>Period</i>	<i>Obligations</i>	
12/01/74-08/31/75	FY75: \$6,966 TOTAL: \$6,966	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jin, R. S. (51-630 369-02-04)	GSFC/Langel, R. A.	13-Physics

NSG 805 Florida A&M University 1829
Studies on the morphological, biochemical, and growth characteristics of salmonella and shigella in waterways surrounding Cape Kennedy

<i>Period</i>	<i>Obligations</i>	
04/01/75-04/01/76	FY75: \$25,000 TOTAL: \$25,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harrell, B. E. (76-371 340-00-00)	KSC/Malone, J. E. (10-371 340-00-00)	59-Life Sci, NEC

NAS 1-9693 Florida State University 1835
Participation in the science planning for the Viking 1975 missions in the area of meteorology

<i>Period</i>	<i>Obligations</i>	
03/23/70-03/31/77	FY75: \$24,833 TOTAL: \$220,001	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hess, S. K. (23-840 815-20-00)	LARC/Williams, T. S., Jr. LARC/Glenny, W. R.	32-Geological Sci

NSG 901 Florida A&M University 1830
Electron-impact excitation of molecular nitrogen

<i>Period</i>	<i>Obligations</i>	
09/12/74-09/11/75	FY75: TOTAL: \$23,218	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jones, H. W. (56-371 340-00-00)	JPL/Trajmar, S.	13-Physics

NGR 10-004-041 Florida State University 1836
Microbial activity in non-aqueous systems

<i>Period</i>	<i>Obligations</i>	
07/17/72-09/14/75	FY75: \$26,765 TOTAL: \$188,465	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Larock, P. A. (10-840 192-55-63)	HQ-SL/Young, R. S. (10-870 189-00-00)	51-Biology

NSG 2029 Florida A&M University 1831
Study of influence of amines on diurnal toxicity of stimulants & depressants

<i>Period</i>	<i>Obligations</i>	
07/01/74-08/31/76	FY75: \$38,805 TOTAL: \$38,805	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Walker, C. A. (21-371 340-00-00)	ARC/Winget, C. M. ARC/Danellis, J. V.	59-Life Sci, NEC

NGR 10-004-056 Florida State University 1837
Infrared absorption from 0.8 to 1.5 microns of Nh3, Ch4 and CO2

<i>Period</i>	<i>Obligations</i>	
03/25/69-01/31/76	FY75: \$24,600 TOTAL: \$210,965	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hunt, R. H. (10-840 196-41-84)	HQ-SL/Brunk, W. E. HQ-SL/Fellows, R. F. (10-840 185-00-00)	11-Astronomy

NSG 1021 Florida State University 1838
Large scale disturbances mechanism of jet noise generation

<i>Period</i>	<i>Obligations</i>	
06/01/74-06/30/76	FY75: \$6,000 TOTAL: \$29,023	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tam, C. K. Hunter, C. (23-702 505-03-12)	LARC/Hardin, J. C.	13-Physics

**NASA'S UNIVERSITY PROGRAM
FLORIDA (Continued)**

NGR 10-019-004 Florida Technological University 1839
Study of a diverse coastal ecosystem on the Atlantic coast of Florida

<i>Period</i>	<i>Obligations</i>	
04/11/72-10/23/75	FY75: \$73,008	TOTAL: \$226,008
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sweet, H. C.	KSC/Lee, W. H.	39-Env Sci, NEC
Ehrhart, L. M.		
Snelson, F. F.		
(76-950 953-00-00)	(76-980 909-64-47)	

NGR 10-019-009 Florida Technological University 1840
Solid rocket exhaust effects on ecology and environment

<i>Period</i>	<i>Obligations</i>	
02/03/73-08/31/75	FY75: \$35,000	TOTAL: \$159,378
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stout, I. J.	KSC/Lee, W. H.	39-Env Sci, NEC
Mickus, J.		
(76-920 989-15-00)	(76-980 909-64-47)	

NAS 8-20247 University of Florida 1841
Study of age deterioration of gasket materials installed in simulated launch vehicle hardware

<i>Period</i>	<i>Obligations</i>	
06/28/65-06/30/76	FY75:	TOTAL: \$29,408
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Patterson, E. P.	MSFC/Schell, J. T.	12-Chemistry
(62-950 951-15-00)	(62-910 933-50-00)	(62-910 933-31-00)

NAS10-7791 University of Florida 1842
Services & material to research & write a narrative history of the JFK's Space Center Apollo launch facilities & operations

<i>Period</i>	<i>Obligations</i>	
10/15/71-12/31/74	FY75:	TOTAL: \$142,017
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Benson, C. D.	KSC/Schnoor, R. H.	73-History
	KSC/Hawkins, G. M.	
(76-030 073-36-06)	(76-950 953-36-00)	

NAS10-8051 University of Florida 1843
Space shuttle thermal protection system condition

<i>Period</i>	<i>Obligations</i>	
06/29/72-12/31/73	FY75:	TOTAL: \$74,400
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Farber, E. A.	KSC/Jorolan, A. E.	49-Engr, NEC
Hsieh, C. K.		
Yang, C. K.		
(76-980 908-00-00)		

NAS10-8404 University of Florida 1844
Remote sensing for evaluating surface temperature freeze conditions

<i>Period</i>	<i>Obligations</i>	
09/05/73-01/15/74	FY75:	TOTAL: \$25,420
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bartholic, J. F.	KSC/Michalski, J. P.	31-Atmos Sci
Phung, H. T.	KSC/Garo, J. T.	
(76-680 160-75-15)	(76-680 160-00-00)	

NAS10-8560 University of Florida 1845
Study models to predict earth-air interface temperature regimes during freeze conditions

<i>Period</i>	<i>Obligations</i>	
05/01/74-11/06/74	FY75:	TOTAL: \$50,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bartholic, J. F.	KSC/Toft, P. D.	39-Env Sci, NEC
(76-680 177-51-91)		

NAS10-8774 University of Florida 1846
Models to predict earth-air interface temperature regimes during freeze conditions

<i>Period</i>	<i>Obligations</i>	
12/06/74-12/05/75	FY75: \$79,991	TOTAL: \$79,991
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bartholic, J. F.	KSC/Toft, P. D.	39-Env Sci, NEC
Sutherland, R. A.		
Hannah, H. E.		
(76-680 177-51-91)		

NCA 2-40501 University of Florida 1847
Simulation of the colian modification of Martian craters

<i>Period</i>	<i>Obligations</i>	
12/02/74-06/15/75	FY75: \$14,929	TOTAL: \$14,929
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Clarkson, M. H.	ARC/Zill, L. P.	41-Aero Engr
(21-702 505-06-81)		

NGL 10-005-008 University of Florida 1848
Theoretical atmospheric physics

<i>Period</i>	<i>Obligations</i>	
06/04/64-04/30/78	FY75: \$44,000	TOTAL: \$508,460
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Green, A. S.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	
(10-840 185-47-81)	(10-840 185-00-00)	

NGL 10-005-022 University of Florida 1849
Gas solubilities and transport properties in fuel cell electrolytes

<i>Period</i>	<i>Obligations</i>	
02/14/66-12/31/75	FY75: \$35,000	TOTAL: \$278,211
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Walker, R. D., Jr.	LERC/Post, R. E.	43-Chem Engr
(22-704 506-23-24)	(22-704 502-05-51)	(22-710 123-00-00)

NGL 10-005-039 University of Florida 1850
Investigation of structures with the field ion microscope

<i>Period</i>	<i>Obligations</i>	
03/14/66-02/01/75	FY75:	TOTAL: \$221,259
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hren, J. J.	LERC/Lad, R. A.	47-Materials Engr
	LERC/Grimes, H. H.	
(10-740 129-00-00)		

NGL 10-005-080 University of Florida 1851
Electrotransport in thin films

<i>Period</i>	<i>Obligations</i>	
03/22/68-04/01/75	FY75:	TOTAL: \$143,273
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hummel, R. E.	LERC/Lad, R. A.	47-Materials Engr
Guy, A. G.		
(10-740 129-00-00)		

**NASA'S UNIVERSITY PROGRAM
FLORIDA (Continued)**

NGL 10-005-089	University of Florida	1852	Experimental investigation of a uranium plasma		
<i>Period</i>	<i>Obligations</i>				
01/30/68-12/01/78	FY75: \$104,000	TOTAL: \$679,795			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Schneider, R. T.	HQ-RR/Thom, K.	13-Physics			
Carroll, E. E.	LARC/Hohl, F.				
Ohanian, M. J.					
(10-704 503-10-01)	(10-704 506-25-11)				
NGL 10-005-127	University of Florida	1853	Experimental investigation of round turbulent jet exhausting into a subsonic cross flow		
<i>Period</i>	<i>Obligations</i>				
12/03/69-10/31/77	FY75: \$23,687	TOTAL: \$172,685			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Sekhon, B. S.	NSTL/Wolverton, B. C.	41-Aero Engr			
	LARC/Weston, R. P.				
(23-702 505-10-31)	(23-760 721-00-00)				
NGR 10-005-057	University of Florida	1854	Studies of electroencephalographic patterns		
<i>Period</i>	<i>Obligations</i>				
05/23/68-01/01/76	FY75: \$85,000	TOTAL: \$419,470			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Webb, W. B.	ARC/Anliker, J. E.	69-Psych, NEC			
	ARC/Huff, E. M.				
(21-970 970-21-52)	(25-770 127-00-00)				
NGR 10-005-169	University of Florida	1855	Lightning studies		
<i>Period</i>	<i>Obligations</i>				
01/15/73-01/15/76	FY75: \$12,131	TOTAL: \$28,997			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Uman, M. A.	KSC/Toft, P. D.	31-Atmos Sci			
Chenette, E. R.					
(76-980 909-67-45)	(76-980 909-64-09)				
NGR 10-005-176	University of Florida	1856	Analysis of Jupiter data from the RAE-I satellite		
<i>Period</i>	<i>Obligations</i>				
06/27/73-09/30/74	FY75:	TOTAL: \$16,414			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Carr, T. D.	HQ-SG/Hallenbeck, D.R.	11-Astronomy			
(10-850 385-00-00)					
NGR 10-005-182	University of Florida	1857	Fundamental studies on electrolyte matrix processing		
<i>Period</i>	<i>Obligations</i>				
06/26/73-12/31/75	FY75: \$33,590	TOTAL: \$67,316			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Walker, R. D., Jr.	LERC/Soltis, D. G.	43-Chem Engr			
Tham, M. K.					
(22-704 502-25-53)					
NGR 10-005-183	University of Florida	1858	Spectrophotometric observation of Persei using the Princeton University Observatory spectrometer on the Copernicus satellite		
<i>Period</i>	<i>Obligations</i>				
12/01/73-11/30/74	FY75:	TOTAL: \$5,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Wood, F. B.	GSFC/Unavailable	11-Astronomy			
(51-850 831-00-00)					
NSG 2028	University of Florida	1859	Mural control of locomotor performance in insects		
<i>Period</i>	<i>Obligations</i>				
07/01/74-08/15/75	FY75:	TOTAL: \$29,990			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Heath, J. E.	ARC/Williams, B. A.	51-Biology			
	ARC/Quattrone, P. D.				
(21-970 970-21-61)					
NSG 3018	University of Florida	1860	Silicon PN junction solar cells		
<i>Period</i>	<i>Obligations</i>				
06/24/74-07/23/76	FY75:	TOTAL: \$56,983			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Lindholm, F. A.	LERC/Godlewski, M. P.	45-Elec Engr			
Sah, C. T.	LERC/Brandhorst, H. W., Jr.				
Li, C. C.					
(22-704 502-05-50)					
NSG 5026	University of Florida	1861	Spatial and temporal perturbation of ozone by solar activity and stratospheric warmings		
<i>Period</i>	<i>Obligations</i>				
10/01/74-09/30/75	FY75: \$24,671	TOTAL: \$24,671			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Prasad, S. S.	GSFC/Heath, D. F.	31-Atmos Sci			
(51-680 683-74-16)					
NSG 5061	University of Florida	1862	Electromagnetic wave energy conversion research		
<i>Period</i>	<i>Obligations</i>				
04/01/75-09/30/75	FY75: \$20,000	TOTAL: \$20,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Bailey, R. L.	GSFC/Peake, H. J.	45-Elec Engr			
	GSFC/Lyons, J. C.				
(51-704 506-23-18)					
NAS 5-22417	University of Miami	1863	Determination of potential solar power sites in Western Hemisphere		
<i>Period</i>	<i>Obligations</i>				
06/05/75-09/05/77	FY75: \$35,000	TOTAL: \$35,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Hiser, H. W.	GSFC/Thekackara, M.	19-Phys Sci, NEC			
(51-400 647-20-01)					
NAS10-8498	University of Miami	1864	Application of remote sensing to detecting thermal pollution		
<i>Period</i>	<i>Obligations</i>				
03/01/74-10/01/74	FY75:	TOTAL: \$50,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Veziroglu, T. N.	KSC/Bland, R. A.	39-Env Sci, NEC			
Lee, S. S.					
(76-680 177-56-91)					
NAS10-8740	University of Miami	1865	Application of remote sensing for prediction and detection of thermal pollution		
<i>Period</i>	<i>Obligations</i>				
10/15/74-10/14/75	FY75: \$110,000	TOTAL: \$110,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Veziroglu, T. N.	KSC/Bland, R. A.	39-Env Sci, NEC			
(76-680 177-56-91)					

**NASA'S UNIVERSITY PROGRAM
FLORIDA (Continued)**

NAS10-8795 **University of Miami** **1866**
Study of laser application to measure vertical sea temperature and turbidity
Period *Obligations*
03/01/75-12/31/75 **FY75: \$30,000** **TOTAL: \$30,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hirschberg, J. G. KSC/Bland, R. A. 39-Env Sci, NEC
Wouters, A. W. KSC/Toft, P. D.

NAS 8-31172 **University of South Florida** **1873**
Investigation of electrical properties of conductive adhesives and film resistors
Period *Obligations*
02/07/75-02/07/76 **FY75: \$19,871** **TOTAL: \$19,871**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sergent, J. MSFC/Carvso, S. V. 45-Elec Engr
MSFC/Dehaye, R. F.
(62-704 502-23-51)

NGR 10-007-008 **University of Miami** **1867**
Research in the Institute of Molecular Evolution in the School of Environmental and Planetary Sciences
Period *Obligations*
06/09/64-09/30/75 **FY75: \$175,000** **TOTAL: \$2,067,040**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Fox, S. W. HQ-SL/Young, R. S. 12-Chemistry
(10-840 192-55-61)

NSG 1159 **University of South Florida** **1874**
Non-Gaussian classification procedures of pattern recognition
Period *Obligations*
06/01/75-09/30/76 **FY75: \$15,000** **TOTAL: \$15,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tsokos, C. P. LARC/Park, S. K. 21-Mathematics
(23-704 506-90-21)

NGR 10-007-052 **University of Miami** **1868**
Study of optical activity in the context of prebiological chemistry
Period *Obligations*
02/27/68-09/30/74 **FY75:** **TOTAL: \$171,040**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Harada, K. HQ-SL/Young, R. S. 12-Chemistry
(10-840 192-55-61)

GEORGIA

NSG 8019 **Atlanta University** **1875**
A study of the redox photo-chemistry of a number of iron complexes
Period *Obligations*
09/01/74-08/31/76 **FY75: \$25,253** **TOTAL: \$25,253**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Reed, J. L. MSFC/Curry, J. E. 12-Chemistry
Johnson, J. MSFC/Kent, M. I.
(62-371 340-00-00)

NGR 10-007-097 **University of Miami** **1869**
Water immersion study
Period *Obligations*
06/08/72-06/30/76 **FY75: \$30,000** **TOTAL: \$95,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Epstein, M. JSC/Leach, C. S. 52-Clinical Med
(72-970 970-51-16)

NGR 11-010-001 **Clark College** **1876**
Study of nucleation
Period *Obligations*
09/01/73-08/31/75 **FY75: \$31,085** **TOTAL: \$71,347**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Walker, G. H. ARC/Pollack, J. B. 31-Atmos Sci
(21-371 340-00-00)

NGR 10-007-113 **University of Miami** **1870**
Negative pressure chamber
Period *Obligations*
08/15/73-05/31/75 **FY75:** **TOTAL: \$9,500**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kline, J. HQ-KT/Zimmerman, R. 52-Clinical Med
Bancalari, E. H.
Pearson, H. E.
(10-250 141-93-02)

NGL 11-001-009 **Emory University** **1877**
Study of cardiovascular adaptation during long-term weightlessness
Period *Obligations*
05/12/65-07/01/78 **FY75: \$30,000** **TOTAL: \$547,179**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Popovic, V. P. ARC/Holton, E. M. 51-Biology
(21-970 970-21-61) (10-870 189-00-00)

NGR 10-007-118 **University of Miami** **1871**
Comparison of stress corrosion cracking behavior of high strength alloys in natural sea water and synthetic sea salt solutions
Period *Obligations*
11/26/73-01/08/76 **FY75: \$28,500** **TOTAL: \$42,750**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Craig, H. L., Jr. LERC/Shannon, J. L., Jr. 47-Materials Engr
LERC/Brown, W. F., Jr.
(22-702 505-01-21)

NGR 11-001-012 **Emory University** **1878**
Effects of gravitational stimuli on sleep and vestibular function
Period *Obligations*
06/01/65-12/01/75 **FY75:** **TOTAL: \$566,038**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Perachio, A. A. ARC/Winter, D. L. 61-Biol Aspects
(10-870 189-00-00)

NSG 1044 **University of Miami** **1872**
Impact properties of fiber reinforced materials and structures
Period *Obligations*
05/01/74-05/31/75 **FY75:** **TOTAL: \$23,892**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Plass, H. J., Jr. LARC/Housner, J. M. 46-Mech Engr
LARC/Rhodes, M. D.
(23-704 502-22-10)

NGR 11-001-016 **Emory University** **1879**
Histopathological & histochemical study of subhuman primates
Period *Obligations*
10/01/63-02/28/76 **FY75: \$75,000** **TOTAL: \$705,812**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bourne, G. H. ARC/Winter, D. L. 51-Biology
(21-970 970-21-61) (23-742 124-00-00)

**NASA'S UNIVERSITY PROGRAM
GEORGIA (Continued)**

NGR 11-001-045 **Emory University** **1880**
 Vestibular influence on sleep in non-human primates
Period *Obligations*
 10/07/71-12/01/75 FY75: \$35,000 **TOTAL: \$210,488**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Perachio, A. A. ARC/Anliker, J. E. 59-Life Sci, NEC
 (21-970 970-21-11) (21-970 970-21-53)

NAS 1-13422 **Georgia Institute of Technology** **1881**
 Study of biological experiments for the Viking mission
Period *Obligations*
 09/13/74-03/31/77 FY75: \$48,393 **TOTAL: \$48,393**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Hubbard, J. S. LARC/Williams, T. S., Jr. 51-Biology
 LARC/Glenny, W. R.
 (23-840 815-20-00)

NAS 3-17827 **Georgia Institute of Technology** **1882**
 Benefit-cost methodology study with use of wind generators application
Period *Obligations*
 06/10/74-08/09/75 FY75: \$1,995 **TOTAL: \$67,189**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Zimmer, R. P. LERC/Hein, G. F. 49-Engr, NEC
 (22-702 770-18-01) (22-704 502-35-62) (22-701 367-00-00)

NAS 3-17861 **Georgia Institute of Technology** **1883**
 Basic noise research combustion and entropy noise in turbo-propulsion systems
Period *Obligations*
 07/16/73-07/15/74 FY75: **TOTAL: \$35,775**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Strahle, W. C. LERC/Huff, R. G. 41-Aero Engr
 Handley, J. C. LERC/Dorsch, R. G.
 (22-704 501-04-01)

NAS 3-18901 **Georgia Institute of Technology** **1884**
 S-band omnidirectional antenna
Period *Obligations*
 06/24/74-12/23/74 FY75: **TOTAL: \$75,331**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Bassett, H. L. LERC/Conroy, M. J. 45-Elec Engr
 (22-704 502-24-16)

NAS 3-19700 **Georgia Institute of Technology** **1885**
 Cost benefits of space communications technology
Period *Obligations*
 05/09/75-01/08/76 FY75: \$91,038 **TOTAL: \$91,038**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Camp, A. A. LERC/Stevenson, S. 49-Engr, NEC
 (22-601 644-04-06)

NAS 5-20956 **Georgia Institute of Technology** **1886**
 Research instrumentation for tornado electromagnetic emission detection
Period *Obligations*
 02/07/75-11/07/75 FY75: \$63,844 **TOTAL: \$63,844**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Robertson, D. W., GSFC/Levine, D. M. 31-Atmos Sci
 (51-680 175-21-45)

NAS 5-22344 **Georgia Institute of Technology** **1887**
 Applications of near-field measurements for NASA requirements
Period *Obligations*
 06/11/75-02/11/76 FY75: \$43,995 **TOTAL: \$43,995**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Rayan, C. E. GSFC/O'Donnell, H. 45-Elec Engr
 (51-500 310-20-31)

NAS 5-22422 **Georgia Institute of Technology** **1888**
 Study of electrically small antennas for wildlife monitoring
Period *Obligations*
 06/12/75-06/12/76 FY75: \$50,000 **TOTAL: \$50,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Jenkins, H. H. GSFC/Dod, L. R. 45-Elec Engr
 (51-680 178-57-81)

NAS 8-28591 **Georgia Institute of Technology** **1889**
 Development of a coherent high scanner
Period *Obligations*
 05/09/72-10/08/73 FY75: **TOTAL: \$73,840**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Callor, W. R. MSFC/Kerr, J. H. 45-Elec Engr
 MSFC/Smith, H. F.
 (62-910 933-00-00)

NAS 8-28735 **Georgia Institute of Technology** **1890**
 Experiments on sphere-forming & composite-casting
Period *Obligations*
 05/16/72-06/18/74 FY75: **TOTAL: \$39,967**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Brown, J. L. MSFC/Hasemeyer, E. A. 47-Materials Engr
 MSFC/McPherson, W. B.
 (62-960 948-90-00)

NAS 8-29753 **Georgia Institute of Technology** **1891**
 Engineering atmospheric model for space shuttle reentry and return
Period *Obligations*
 04/13/73-01/13/74 FY75: **TOTAL: \$46,539**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Justus, C. G. MSFC/Smith, O. E. 13-Physics
 MSFC/Smith, R. E.
 (62-704 501-08-10)

NAS 8-29860 **Georgia Institute of Technology** **1892**
 Design, fabrication, testing, & delivery of electron gun
Period *Obligations*
 06/08/73-02/28/74 FY75: **TOTAL: \$23,938**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Hart, R. K. MSFC/Kerr, J. H. 45-Elec Engr
 (62-680 160-00-00)

NAS 8-30246 **Georgia Institute of Technology** **1893**
 Multiple halogram recording in lithium niobate
Period *Obligations*
 10/01/73-10/01/75 FY75: \$20,000 **TOTAL: \$28,976**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Callen, W. R. MSFC/Kerr, J. H. 13-Physics
 Gaylord, T. K. MSFC/Pitts, E. H.
 (62-620 656-23-01) (62-980 975-10-00)

**NASA'S UNIVERSITY PROGRAM
GEORGIA (Continued)**

NAS 8-30534 Georgia Institute of Technology **1894**
Analysis of six band multispectral images and fabrication of a
Fourier transform detector

<i>Period</i>	<i>Obligations</i>	
12/21/73-06/21/75	FY75:	TOTAL: \$59,881
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Shackelford, R. G.	MSFC/Kerr, J. H.	99-Multi-Discip
(62-680 177-51-71)	(62-680 177-52-71)	

NAS 8-30617 Georgia Institute of Technology **1895**
Probability analysis of crank initiation

<i>Period</i>	<i>Obligations</i>	
03/22/74-05/22/76	FY75: \$9,887	TOTAL: \$19,342
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hanagud, S. V.	MSFC/Thomas, J. M.	19-Phys Sci, NEC
	MSFC/Bianca, C. J., Jr.	
(62-930 966-40-00)		

NAS 8-30653 Georgia Institute of Technology **1896**
USGS/NASA land-use classification system

<i>Period</i>	<i>Obligations</i>	
04/02/74-12/31/75	FY75: \$10,000	TOTAL: \$29,980
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dees, J. W.	MSFC/Paludan, C. T.	39-Env Sci, NEC
Faust, N. L.	MSFC/Bensko, J., Jr.	
Spann, G. W.		
(62-680 176-53-73)	(62-680 177-32-71)	(62-680 177-52-73)

NAS 8-30657 Georgia Institute of Technology **1897**
Neutral thermodynamic atmospheric model research study

<i>Period</i>	<i>Obligations</i>	
04/22/74-01/21/76	FY75: \$22,000	TOTAL: \$56,637
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Justus, C. G.	MSFC/Smith, O. E.	49-Engr, NEC
	MSFC/Johnson, D. L.	
(62-920 989-13-00)	(62-920 986-25-00)	

NAS 8-30919 Georgia Institute of Technology **1898**
Time delay profiles for teleoperator

<i>Period</i>	<i>Obligations</i>	
06/06/74-05/21/75	FY75:	TOTAL: \$39,835
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Walsh, J. R.	MSFC/Huggins, C. T.	21-Mathematics
(62-970 970-63-20)		

NAS 8-31193 Georgia Institute of Technology **1899**
A laser scanner for 35 mm film

<i>Period</i>	<i>Obligations</i>	
02/25/75-02/25/76	FY75: \$49,967	TOTAL: \$49,967
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Callen, W. R.	MSFC/Kerr, J. H.	13-Physics
Gaylord, T. K.	MSFC/Smith, H. L.	
(62-680 177-32-71)		

NAS 8-31344 Georgia Institute of Technology **1900**
Define conceptual design of an on-board optical processor with
components

<i>Period</i>	<i>Obligations</i>	
03/10/75-08/10/75	FY75: \$59,799	TOTAL: \$59,799
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Walsh, J. R.	MSFC/Kerr, J. H.	13-Physics
	MSFC/Smith, H. F.	
(62-620 656-23-01)		

NAS10-8375 Georgia Institute of Technology **1901**
Study of computer model development for electrical power
system

<i>Period</i>	<i>Obligations</i>	
06/26/73-12/24/74	FY75: \$3,246	TOTAL: \$99,246
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Webb, R. P.	KSC/Wright, M. I.	45-Elec Engr
Hayes, T. P.		
Meliopoulos, A. P.		
(76-980 909-64-42)		

NGL 11-002-004 Georgia Institute of Technology **1902**
Theoretical and experimental research program in geophysics with
emphasis on upper atmosphere chemical release studies

<i>Period</i>	<i>Obligations</i>	
09/27/62-05/31/77	FY75: \$35,000	TOTAL: \$710,075
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Edwards, H. D.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Hipsher, H. F.	
(10-840 185-47-81)	(10-850 188-00-00)	

NGL 11-002-085 Georgia Institute of Technology **1903**
Behavior of nozzles and acoustic liners in three-dimensional
acoustic fields

<i>Period</i>	<i>Obligations</i>	
02/18/69-02/28/75	FY75:	TOTAL: \$248,572
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Zinn, B. T.	LERC/Priem, R. J.	41-Aero Engr
Daniel, B. R.		
(22-704 502-04-25)		

NGL 11-002-096 Georgia Institute of Technology **1904**
Research on stability of large shells

<i>Period</i>	<i>Obligations</i>	
04/04/69-05/31/75	FY75:	TOTAL: \$468,473
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Horton, W. H.	LARC/Peterson, J. P.	41-Aero Engr
(23-704 501-22-01)	(23-760 722-00-00)	

NGR 11-002-133 Georgia Institute of Technology **1905**
Investigations of lubricant rheology as applied to elastohydrodynamic
lubrication

<i>Period</i>	<i>Obligations</i>	
03/05/71-04/04/76	FY75: \$35,005	TOTAL: \$164,383
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Winer, W. O.	LERC/Jones, W. R., Jr.	46-Mech Engr
Sanborn, D. M.		
(22-704 506-16-22)	(22-704 502-21-24)	

NGR 11-002-157 Georgia Institute of Technology **1906**
Theory of turbulent chemically reacting flows with application
to supersonic combustion

<i>Period</i>	<i>Obligations</i>	
11/01/72-12/31/74	FY75:	TOTAL: \$32,200
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wu, J. C.	LARC/Evans, J. S.	41-Aero Engr
Giddens, D. P.	LARC/Anderson, G. Y.	
(23-704 501-04-03)		

**NASA'S UNIVERSITY PROGRAM
GEORGIA (Continued)**

NGR 11-002-169 Georgia Institute of Technology 1907
Reliability-based fatigue design and maintenance procedures;
fatigue theories

Period	Obligations	
02/09/73-03/31/76	FY75: \$16,400	TOTAL: \$44,090
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hanagud, S. V.	LARC/Leybold, H. A.	21-Mathematics
	LARC/Davidson, J. R., Jr.	

(23-702 505-02-31)

NGR 11-002-177 Georgia Institute of Technology 1908
Study of effects of injector geometry on fuel air mixing and
combustion 1973

Period	Obligations	
09/01/73-07/31/76	FY75: \$29,966	TOTAL: \$48,898
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bangert, L. H.	LARC/Boatright, W. B.	41-Aero Engr
	LARC/Sebacher, D. I.	

(23-704 501-04-03)

NGR 11-002-179 Georgia Institute of Technology 1909
Determination of effects of nozzle nonlinearities upon nonlinear
stability of liquid

Period	Obligations	
07/02/73-07/31/75	FY75:	TOTAL: \$49,570
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Zinn, B. T.	LERC/Priem, R. J.	42-Astro Engr

(22-704 502-04-25)

NGR 11-002-185 Georgia Institute of Technology 1910
Dynamic stall in an oscillating air stream

Period	Obligations	
11/01/73-10/31/75	FY75: \$36,675	TOTAL: \$69,567
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Pierce, G. A.	LARC/Hammond, C. E.	41-Aero Engr

(23-702 505-10-26) (23-702 760-63-02)

NSG 1004 Georgia Institute of Technology 1911
Study of viscous flow about airfoils by the integro-differential
method

Period	Obligations	
03/01/74-08/31/75	FY75:	TOTAL: \$10,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wu, J. C.	LARC/Carter, J. E.	41-Aero Engr

(23-704 501-06-01)

NSG 1047 Georgia Institute of Technology 1912
Propagation of aircraft noise

Period	Obligations	
05/01/74-05/31/76	FY75: \$26,654	TOTAL: \$53,295
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hadden, W. J., Jr.	LARC/Posey, J. W.	13-Physics
Pierce, A. D.	LARC/Clark, L. R.	

(23-702 505-03-12)

NSG 1168 Georgia Institute of Technology 1913
Analysis of UF6 breeder reactor power plants

Period	Obligations	
04/07/75-02/06/76	FY75: \$58,000	TOTAL: \$58,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Williams, J. R.	LARC/Hohl, F.	13-Physics

(23-704 503-10-03)

NSG 1200 Georgia Institute of Technology 1914
Experiment definition using the space laboratory, long duration
exposure facility, and space transportation system shuttle

Period	Obligations	
06/15/75-03/14/76	FY75: \$20,000	TOTAL: \$20,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sheppard, A. P.	LARC/Dibattista, J. D.	99-Multi-Discip
Bush, A. M.	LARC/Oneal, R. L.	
Williams, R. J.		

(23-980 975-50-01)

NSG 2004 Georgia Institute of Technology 1915
Investigation into the physical structure of porous catalysts and
adsorbents

Period	Obligations	
02/01/74-04/30/75	FY75:	TOTAL: \$22,282
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Orr, C.	ARC/Quattrone, P. D.	19-Phys Sci, NEC
	ARC/Wydeven, T. J.	

(21-970 970-22-21)

NSG 2054 Georgia Institute of Technology 1916
Prediction of cryogenic heat pipe performance

Period	Obligations	
01/01/75-06/30/76	FY75: \$16,970	TOTAL: \$16,970
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Colwell, G. T.	ARC/Kirkpatrick, J. P.	46-Mech Engr

(21-704 506-16-31)

NSG 3015 Georgia Institute of Technology 1917
Combustion and entropy noise in turbopropulsion systems

Period	Obligations	
07/15/74-07/14/76	FY75:	TOTAL: \$40,853
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Strahle, W. C.	LERC/Huff, R. G.	13-Physics

(22-704 501-04-01)

NSG 3036 Georgia Institute of Technology 1918
Acoustic properties of turbofan inlets

Period	Obligations	
09/01/74-08/31/77	FY75: \$45,002	TOTAL: \$45,002
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Zinn, B. T.	LERC/Feiler, C. E.	41-Aero Engr
Kirkland, R. K.	LERC/Rice, E. J.	

(22-704 501-15-83)

NSG 3052 Georgia Institute of Technology 1919
Experimental determination of rocket injector response factors
under reactive conditions

Period	Obligations	
03/01/75-02/28/76	FY75: \$49,827	TOTAL: \$49,827
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Zinn, B. T.	LERC/Priem, R. J.	42-Astro Engr

(22-704 506-21-53)

NSG 5012 Georgia Institute of Technology 1920
Research in millimeter wave techniques

Period	Obligations	
06/15/74-03/31/76	FY75: \$47,000	TOTAL: \$106,433
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dees, J. W.	GSFC/King, J. L.	45-Elec Engr

(51-620 643-10-01)

**NASA'S UNIVERSITY PROGRAM
GEORGIA (Continued)**

NSG 7067 Georgia Institute of Technology 1921
Analysis of advanced reactor for geosynchronous power plants
Period *Obligations*
06/01/74-12/31/74 FY75: TOTAL: \$19,898
Prin. Invest. NASA Tech. Officer CASE Category
Williams, R. HQ-RR/Thom, K. 13-Physics
LARC/Hohl, F.
(10-704 503-10-01)

NSG 7069 Georgia Institute of Technology 1922
Photocatalytic synthesis on planetary surfaces; molecular bases
for the adaptation of halophilic microorganisms
Period *Obligations*
09/15/74-08/31/76 FY75: \$24,979 TOTAL: \$24,979
Prin. Invest. NASA Tech. Officer CASE Category
Hubbard, J. S. HQ-SL/Young, R. S. 51-Biology
(10-840 192-55-64)

NAS 8-30884 Georgia Southwestern College 1923
Research in geological-vegetative relationships
Period *Obligations*
09/01/74-12/31/76 FY75: \$37,962 TOTAL: \$37,962
Prin. Invest. NASA Tech. Officer CASE Category
Arden, D. D. MSFC/Bensko, J., Jr. 32-Geological Sci
Westra, R. N. MSFC/Jones, R. E.
(62-680 177-53-71)

NGL 11-008-001 Morehouse College 1924
A research program in atmospheric and astro chemistry
Period *Obligations*
05/22/72-04/01/78 FY75: \$42,512 TOTAL: \$119,444
Prin. Invest. NASA Tech. Officer CASE Category
Gales, J. N. MSFC/Stephens, J. B. 12-Chemistry
Merideth, C. W. MSFC/Kent, M. I.
(62-371 340-00-00) (10-371 340-00-00)

NGR 11-008-002 Morehouse College 1925
Research program in magnetogasdynamics utilizing hypervelocity
coaxial plasma generators
Period *Obligations*
04/18/73-05/31/74 FY75: TOTAL: \$23,045
Prin. Invest. NASA Tech. Officer CASE Category
Spight, C. HQ-P/Pohly, J. G. 13-Physics
MSFC/Shriver, E. L.
(10-371 340-00-00)

NGT 11-008-004 Morehouse College 1926
National aerospace fellowship program
Period *Obligations*
06/01/74-05/31/76 FY75: \$7,000 TOTAL: \$14,000
Prin. Invest. NASA Tech. Officer CASE Category
Gayles, J. N. HQ-P/Pohly, J. G. 99-Multi-Discip
HQ-U/Jenkins, H. G.
(10-030 010-00-00)

NSG 8014 Morehouse College 1927
A research program in magnetogasdynamics
Period *Obligations*
06/03/74-06/02/75 FY75: TOTAL: \$15,906
Prin. Invest. NASA Tech. Officer CASE Category
Spight, C. MSFC/Shriver, E. L. 13-Physics
MSFC/Kent, M. I.
(62-371 340-00-00)

NSG 8020 Morehouse College 1928
A study for a heavy atom tracer method for the measurement
of turbulence in plasmas
Period *Obligations*
08/01/74-08/31/76 FY75: \$37,023 TOTAL: \$37,023
Prin. Invest. NASA Tech. Officer CASE Category
Turner, J. M. MSFC/Stone, N. H. 13-Physics
MSFC/Kent, M. I.
(62-371 340-00-00)

NSG 8027 Morris Brown College 1929
Increasing adhesion of paracyclophane polymers to epoxy glass
lamine surfaces
Period *Obligations*
06/01/75-09/01/76 FY75: \$22,593 TOTAL: \$22,593
Prin. Invest. NASA Tech. Officer CASE Category
Weaver, F. MSFC/Patterson, W. J. 12-Chemistry
MSFC/Kent, M. I.
(62-371 340-00-00)

NAS 8-30619 North Georgia College 1930
Correlation studies of remote sensing and fine beetle infestation
Period *Obligations*
04/09/74-03/31/77 FY75: \$10,030 TOTAL: \$19,788
Prin. Invest. NASA Tech. Officer CASE Category
Biesbrock, J. A. MSFC/Downs, S. W. 51-Biology
MSFC/Paludan, C. T.
(62-680 177-51-71)

NSG 8002 Paine College 1931
Study of materials for space processing
Period *Obligations*
01/14/74-01/13/76 FY75: \$20,424 TOTAL: \$43,654
Prin. Invest. NASA Tech. Officer CASE Category
Miller, J. E. MSFC/Bannister, T. C. 13-Physics
MSFC/Kent, M. I.
(62-371 340-00-00)

NSG 803 Savannah State College 1932
Toxic elements and organic degradation products in aquatic bodies
and sediments around KSC
Period *Obligations*
09/23/74-09/22/75 FY75: \$30,560 TOTAL: \$30,560
Prin. Invest. NASA Tech. Officer CASE Category
Ghuman, G. S. KSC/Perkins, E. E. 39-Env Sci, NEC
Menon, M. P.
Obi Emeh, C.
(76-371 340-00-00)

NGT 11-013-001 Spelman College 1933
Training of two under-graduate students in the space-related
sciences and engineering
Period *Obligations*
06/01/74-05/31/76 FY75: \$7,000 TOTAL: \$14,000
Prin. Invest. NASA Tech. Officer CASE Category
McBay, S. M. HQ-P/Pohly, J. G. 99-Multi-Discip
HQ-U/Jenkins, H. G.
(10-030 010-00-00)

**NASA'S UNIVERSITY PROGRAM
GEORGIA (Continued)**

NAS 8-31565 University of Georgia 1934
Study to design variable orientation solar concentrators for space applications
Period *Obligations*
06/16/75-01/15/76 FY75: \$15,000 TOTAL: \$15,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Burkhard, D. G. MSFC/Clingman, J. H. 13-Physics
MSFC/Whitacre, W. E.
(62-400 647-10-01)

NASW 2401 University of Georgia 1935
Computer Software Management Information Center Operation
Period *Obligations*
10/10/72-06/30/74 FY75: TOTAL: \$175,286
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Carmon, J. L. HQ-KT/Holley, H. L. 99-Multi-Discip
HQ-KT/Harrison, J. O.
(10-250 141-93-01) (10-250 141-00-00)

NASW 2658 University of Georgia 1936
Operation of the Computer Software Management Information Center
Period *Obligations*
07/01/74-06/30/75 FY75: \$210,000 TOTAL: \$210,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Unavailable HQ-KT/Harrison, J. O. 99-Multi-Discip
(10-250 141-93-01)

NGR 11-003-037 University of Georgia 1937
Interpretation of stratigraphy and geologic mapping of Mars from Mariner-Mars television pictures
Period *Obligations*
05/24/72-04/14/76 FY75: \$16,000 TOTAL: \$66,300
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Howard, H. T. HQ-SL/Dwornik, S. E. 32-Geological Sci
Woodruff, J. F. HQ-SL/Holt, H. E.
(10-840 384-50-80)

HAWAII

NAS 2-8590 University of Hawaii 1938
Research in packet broadcasting
Period *Obligations*
10/01/74-09/30/76 FY75: \$400,000 TOTAL: \$400,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kuo, F. F. ARC/Smith, M. C., Jr. 99-Multi-Discip
Abramson, N.
(21-760 366-00-00)

NAS 2-8600 University of Hawaii 1939
Research in secured multi-processor computing system
Period *Obligations*
10/12/74-10/11/75 FY75: \$331,418 TOTAL: \$331,418
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lichtenberger, W. W. ARC/Smith, M. C., Jr. 21-Mathematics
(21-760 366-00-00)

NAS 2-8687 University of Hawaii 1940
Study on metabolism and energetics in hypo-gravity
Period *Obligations*
10/01/74-09/30/75 FY75: \$35,000 TOTAL: \$35,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Siegel, S. M. ARC/Taketa, S. T. 51-Biology
(21-970 970-21-61)

NAS 8-27950 University of Hawaii 1941
An observational investigation of coronal active regions in support of the Apollo telescope mount in the first Skylab mission
Period *Obligations*
11/03/71-03/02/74 FY75: TOTAL: \$301,996
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jefferies, J. T. MSFC/McGuire, J. P. 11-Astronomy
Orrall, F. Q. MSFC/Gary, A.
(62-960 996-00-00)

NASR 5 University of Hawaii 1942
Design, construction, and testing of a prototype high speed, high resolution rocket spectrograph
Period *Obligations*
01/01/61-08/31/75 FY75: \$15,817 TOTAL: \$890,969
Prin. Invest. *NASA Tech. Officer* *CASE Category*
McAllister, H. C. HQ-SG/Jordan, S. D. 13-Physics
HQ-SG/Timothy, A. D.
(10-850 188-00-00) (10-850 879-00-00)

NASW 2326 University of Hawaii 1943
Design development and fabrication of research equipment
Period *Obligations*
06/22/72-06/30/75 FY75: TOTAL: \$360,102
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jefferies, J. T. HQ-SM/Strickland, A. T. 11-Astronomy
(10-810 195-43-50) (10-810 383-00-00)

NASW 2742 University of Hawaii 1944
Construction and installation of a 3-meter aperture infrared telescope facility
Period *Obligations*
08/20/74-12/31/75 FY75: \$535,000 TOTAL: \$535,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jefferies, J. T. HQ-BX/Weir, J. F. 11-Astronomy
HQ-SL/Brunk, W. E.
(10-840-340-00-00)

NGL 12-001-011 University of Hawaii 1945
Research in coronal and chromospheric physics
Period *Obligations*
11/16/64-10/31/76 FY75: \$145,000 TOTAL: \$3,224,234
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jefferies, J. T. HQ-SG/Weldon, J. M. 11-Astronomy
HQ-SG/Oertel, G. K.
(10-850 188-38-52)

NGL 12-001-042 University of Hawaii 1946
Performance and capabilities of terrestrial organisms in extreme and unusually gaseous and liquid environments
Period *Obligations*
04/14/67-06/30/77 FY75: \$50,000 TOTAL: \$451,378
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Siegel, S. M. HQ-SL/Young, R. S. 51-Biology
(10-840 192-55-64) (10-870 189-00-00)

**NASA'S UNIVERSITY PROGRAM
HAWAII (Continued)**

NGL 12-001-057 **University of Hawaii** **1947**
Research in planetary studies

<i>Period</i>	<i>Obligations</i>	
05/21/68-06/30/78	FY75: \$386,500	TOTAL: \$2,198,472
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jefferies, J. T.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Fellows, R. F.	
(10-840 196-41-80)	(10-840 185-00-00)	

NGR 12-001-075 **University of Hawaii** **1948**
Research in solar ultraviolet spectroscopy

<i>Period</i>	<i>Obligations</i>	
12/09/69-09/30/75	FY75: \$200,000	TOTAL: \$1,450,421
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jefferies, J. T.	HQ-SG/Timothy, A. F.	11-Astronomy
	HQ-SG/Jordan, S. D.	
(10-850 879-11-00)		

NGR 12-001-109 **University of Hawaii** **1949**
N-heterocyclic compounds role in chemical evolution distribution in meteorites ancient sediments and as products of spark discharge reactions

<i>Period</i>	<i>Obligations</i>	
06/26/72-05/14/76	FY75:	TOTAL: \$85,627
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Folsome, C. E.	HQ-SL/Young, R. S.	12-Chemistry
(10-840 192-55-61)	(10-840 192-00-00)	

NGR 12-001-127 **University of Hawaii** **1950**
Operation of the Haleakala Lunar Ranging Observatory

<i>Period</i>	<i>Obligations</i>	
06/01/73-06/30/76	FY75: \$14,000	TOTAL: \$697,200
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jefferies, J. T.	HQ-SM/Strickland, A. T.	32-Geological Sci
Carter, W. E.		
(10-810 195-43-51)	(10-810 195-43-50)	

NSG 5027 **University of Hawaii** **1951**
A search for boron in AP stars

<i>Period</i>	<i>Obligations</i>	
10/14/74-10/13/75	FY75: \$11,531	TOTAL: \$11,531
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Boesgaard, A. M.	GSFC/Kupperian, J. E.	11-Astronomy
(51-850 831-42-00)		

NSR 12-001-019 **University of Hawaii** **1952**
Design, development, fabrication & installation of a 84 inch telescope for lunar planetary & stellar observations

<i>Period</i>	<i>Obligations</i>	
06/30/65-06/30/75	FY75:	TOTAL: \$3,024,796
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jefferies, J. T.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Fellows, R. F.	
(10-840 185-00-00)		

IDAHO

NGR 13-001-014 **University of Idaho** **1953**
Interpretation of a lunar far side area

<i>Period</i>	<i>Obligations</i>	
06/11/73-06/30/74	FY75:	TOTAL: \$6,847
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hall, W. B.	HQ-SM/Bryson, R. P.	32-Geological Sci
	HQ-SM/Allenby, R. J.	
(10-810 383-09-50)		

ILLINOIS

NSG 3030 **Chicago State University** **1954**
The restoration of obliterated serial numbers by ultrasonically cavitated water

<i>Period</i>	<i>Obligations</i>	
07/01/74-08/31/76	FY75: \$25,988	TOTAL: \$25,988
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Treptow, R. S.	LERC/Young, S. G.	99-Multi-Discip
(22-371 340-00-00)		

NSG 1097 **Greenville College** **1955**
Delayed light emission of the products of ozonated rubrene

<i>Period</i>	<i>Obligations</i>	
09/05/74-09/10/75	FY75: \$23,388	TOTAL: \$23,388
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Richards, R. R.	LARC/Rogowski, R. S.	39-Env Sci, NEC
(23-704 506-16-13)	(23-704 502-01-03)	

NGR 14-004-049 **Illinois Institute of Technology** **1956**
The influence of impurities upon the rate of nickel diffusion in face centered cubic iron

<i>Period</i>	<i>Obligations</i>	
05/13/71-11/30/75	FY75:	TOTAL: \$30,572
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Higgins, G. T.	HQ-SM/Bryson, R. P.	39-Env Sci, NEC
(10-810 195-00-00)		

NSG 1120 **Illinois Institute of Technology** **1957**
Streamwise vortices in turbulent shear flows

<i>Period</i>	<i>Obligations</i>	
11/08/74-01/31/76	FY75: \$15,003	TOTAL: \$15,003
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nagib, H. M.	LARC/Beckwith, I. E.	41-Aero Engr
Morkovin, M. V.	LARC/Stainback, P. C.	
(23-702 505-06-41)		

NSG 7039 **Illinois Institute of Technology** **1958**
Review of coaxial flows with application to gas core nuclear reactors

<i>Period</i>	<i>Obligations</i>	
06/01/74-08/31/75	FY75:	TOTAL: \$30,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Weinstein, H.	HQ-RR/Thom, K.	13-Physics
	LARC/Hohl, F.	
(10-704 502-10-01)		

**NASA'S UNIVERSITY PROGRAM
ILLINOIS (Continued)**

NAS 9-12280 Northwestern University 1959
Star study
Period Obligations
11/23/71-12/31/75 FY75: TOTAL: \$45,500
Prin. Invest. NASA Tech. Officer CASE Category
Telford, J. W. JSC/Henize, K. G. 11-Astronomy
(72-910 924-23-00)

NGL 14-007-016 Northwestern University 1960
Optical study
Period Obligations
02/05/65-11/30/74 FY75: TOTAL: \$705,863
Prin. Invest. NASA Tech. Officer CASE Category
Hynek, J. A. HQ-SM/Bryson, R. P. 32-Geological Sci
(10-840 185-00-00) (10-810 195-00-00)

NGL 14-007-041 Northwestern University 1961
A study of celestial objects of high angular momenta
Period Obligations
02/18/66-10/30/75 FY75: \$12,000 TOTAL: \$217,251
Prin. Invest. NASA Tech. Officer CASE Category
Huang, S. S. HQ-SG/Rosendhal, J. D. 11-Astronomy
(10-850 188-41-51) (10-850 188-00-00) HQ-SG/Roman, N. G.

NGL 14-007-058 Northwestern University 1962
Research program in administration
Period Obligations
06/04/68-06/30/75 FY75: TOTAL: \$425,000
Prin. Invest. NASA Tech. Officer CASE Category
Radnor, M. HQ-P/Morris, J. D. 79-Soc Sci, NEC
(10-370 183-00-00)

NGL 14-007-062 Northwestern University 1963
Studies and analysis of the management of scientific research and development
Period Obligations
06/27/67-12/31/74 FY75: TOTAL: \$260,000
Prin. Invest. NASA Tech. Officer CASE Category
Rubenstein, A. H. HQ-P/Morris, J. D. 99-Multi-Discip
Thompson, C. N. (10-370 183-00-00) (10-250 143-00-00)

NGL 14-007-081 Northwestern University 1964
Potential and charge distribution near a metallic interface
Period Obligations
01/21/69-12/31/75 FY75: TOTAL: \$150,000
Prin. Invest. NASA Tech. Officer CASE Category
Waber, J. T. LERC/Lad, R. A. 13-Physics
(22-704 502-01-02) (10-740 129-00-00) LERC/Bambakidis, G.

NGR 14-007-084 Northwestern University 1965
Effects of surface irregularities and friction on elasto-hydrodynamic lubrication
Period Obligations
10/20/69-03/31/76 FY75: \$24,946 TOTAL: \$132,922
Prin. Invest. NASA Tech. Officer CASE Category
Cheng, H. LERC/Zaretsky, E. V. 46-Mech Engr
(22-704 501-24-10) (22-760 126-00-00)

NGR 14-007-114 Northwestern University 1966
Study program of the influences of intensity and scale of turbulence on emission concentrations in the primary zone of a gas turbine combustor
Period Obligations
06/01/71-06/30/75 FY75: TOTAL: \$47,625
Prin. Invest. NASA Tech. Officer CASE Category
Kovitz, A. A. LERC/Grobman, J. S. 41-Aero Engr
(22-760 126-00-00)

NGR 14-007-122 Northwestern University 1967
Time variations of UV emission features of BE stars
Period Obligations
08/01/72-01/31/75 FY75: TOTAL: \$14,400
Prin. Invest. NASA Tech. Officer CASE Category
Bahng, J. D. HQ-SG/Sobieski, S. 11-Astronomy
(10-850 385-41-00) (10-850 385-00-00)

NGR 14-007-131 Northwestern University 1968
Study of electronic factors in fracture of metals
Period Obligations
07/30/73-06/29/76 FY75: \$25,000 TOTAL: \$75,000
Prin. Invest. NASA Tech. Officer CASE Category
Waber, J. T. LERC/Behrendt, D. R. 13-Physics
(22-704 502-01-02)

NGR 14-007-136 Northwestern University 1969
Study of NASA and its laboratories in a changing environment
Period Obligations
11/01/73-01/31/75 FY75: TOTAL: \$24,000
Prin. Invest. NASA Tech. Officer CASE Category
Radnor, M. HQ-D/Myers, B. C. 99-Multi-Discip
(10-030 010-00-00)

NSG 3039 Northwestern University 1970
Investigation of interaction of turbine blade tips and labyrinth seals with housings of jet engines and gas turbines
Period Obligations
09/16/74-08/31/76 FY75: \$34,937 TOTAL: \$34,937
Prin. Invest. NASA Tech. Officer CASE Category
Burton, R. A. LERC/Ludwig, L. P. 47-Materials Engr
(22-702 505-04-41) (22-704 501-24-10)

NSG 3042 Northwestern University 1971
Influence of high traction fluids on elasto-hydrodynamic traction
Period Obligations
01/15/75-01/14/76 FY75: \$4,982 TOTAL: \$4,982
Prin. Invest. NASA Tech. Officer CASE Category
Cheng, H. S. LERC/Zaretsky, E. V. 46-Mech Engr
(22-702 505-04-41) LERC/Loewenthal, S. H.

NAS 9-14610 Southern Illinois University - Carbondale 1972
Hydrology of prehistoric farming systems in a Central Arizona ecotone
Period Obligations
03/01/75-09/30/75 FY75: \$13,979 TOTAL: \$13,979
Prin. Invest. NASA Tech. Officer CASE Category
Gummerman, G. J. JSC/Miller, M. L. 32-Geological Sci
(72-680 652-01-83)

**NASA'S UNIVERSITY PROGRAM
ILLINOIS (Continued)**

NGR 14-008-026 Southern Illinois University - Carbondale **1973**
Characterization of developmental physiology of previously unstudied life form, obligately, halophilic blue-green algae, aphanothece halothyta

<i>Period</i>	<i>Obligations</i>	
05/08/73-05/31/76	FY75: \$37,101	TOTAL: \$111,202
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Yopp, J. H.	HQ-SL/Young, R. S.	51-Biology
(10-840 192-55-64)		

NAS 2-6551 University of Chicago **1974**
Pioneer F/G charged particle experiment data analysis

<i>Period</i>	<i>Obligations</i>	
08/09/71-06/30/76	FY75: \$214,000	TOTAL: \$668,483
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Simpson, J. A.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	
(21-840 811-22-00)		

NAS 5-9096 University of Chicago **1975**
Cosmic ray electron experiment

<i>Period</i>	<i>Obligations</i>	
11/18/64-09/30/74	FY75: \$1,159,000	TOTAL: \$1,159,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Meyer, P.	GSFC/Meese, K. J.	13-Physics
(51-850 385-00-00)		

NAS 5-11067 University of Chicago **1976**
IMP-H&J solar flare and isotope experiment

<i>Period</i>	<i>Obligations</i>	
06/11/68-11/30/76	FY75: \$379,888	TOTAL: \$1,520,888
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sharp, J. D.	GSFC/Davis, M. A.	13-Physics
(51-850 861-42-00)		

NAS 5-20674 University of Chicago **1977**
Quasi ray electrons experiment for ISEE-C heliocentric spacecraft

<i>Period</i>	<i>Obligations</i>	
10/24/74-07/31/80	FY75: \$89,000	TOTAL: \$89,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Meyer, P.	GSFC/Gallagher, W. F.	13-Physics
(51-850 862-12-00)		

NAS 5-20967 University of Chicago **1978**
Study for adaptation of transition radiation experiment to spacelab shuttle missions

<i>Period</i>	<i>Obligations</i>	
02/19/75-08/19/75	FY75: \$79,688	TOTAL: \$79,688
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Meyer, P.	GSFC/White, A. F., Jr.	11-Astronomy
Muller, D.		
Lampo, J.		
(51-850 356-64-46)		

NAS 5-23288 University of Chicago **1979**
Instrument definition study for large space telescope

<i>Period</i>	<i>Obligations</i>	
08/15/73-12/31/74	FY75: \$17,976	TOTAL: \$17,976
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Van Altena, W. F.	GSFC/Sobieski, S.	11-Astronomy
(51-850 188-78-58)		

NAS 8-27407 University of Chicago **1980**
HEAO-MISSION B experiment feasibility study on high energy electron

<i>Period</i>	<i>Obligations</i>	
06/07/71-06/30/74	FY75: \$251,039	TOTAL: \$251,039
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Meyer, P.	MSFC/Dabbs, J. R.	11-Astronomy
	MSFC/Cochran, J.	
(62-850 832-00-00)		

NGL 14-001-001 University of Chicago **1981**
Investigation of effects of solar wind in interplanetary space

<i>Period</i>	<i>Obligations</i>	
08/01/60-07/31/77	FY75: \$69,000	TOTAL: \$902,372
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Parker, E. N.	HQ-SG/Lazarus, A. J.	11-Astronomy
	HQ-SG/Opp, A. G.	
(10-850 188-46-56) (10-850 188-46-51)		

NGL 14-001-005 University of Chicago **1982**
High altitude balloon investigations on composition, energy spectrum & intensity of primary cosmic radiation at high & intermediate geomagnetic latitudes

<i>Period</i>	<i>Obligations</i>	
05/01/61-10/31/77	FY75: \$365,000	TOTAL: \$4,347,258
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Meyer, P.	HQ-SG/Lazarus, A. J.	11-Astronomy
	HQ-SG/Opp, A. G.	
(10-850 188-46-56) (10-850 385-46-00)		

NGL 14-001-006 University of Chicago **1983**
Experimental and theoretical studies of energetic particles and electrodynamic processes in interplanetary space and in vicinity of planets

<i>Period</i>	<i>Obligations</i>	
08/01/61-07/31/76	FY75: \$474,837	TOTAL: \$4,597,396
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Simpson, J. A.	HQ-SG/Lazarus, A. J.	11-Astronomy
	HQ-SG/Opp, A. G.	
(10-850 188-46-56) (10-850 385-46-00)		

NGL 14-001-010 University of Chicago **1984**
Research and investigation of origin, age and composition of meteorites

<i>Period</i>	<i>Obligations</i>	
03/11/63-03/31/77	FY75: \$55,800	TOTAL: \$1,148,503
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Anders, E.	HQ-SM/Stuart-Alexander, D. E.	32-Geological Sci
	HQ-SM/Roberson, F. I.	
(10-810 195-20-04) (10-810 195-42-67) (10-810 383-09-57)		

NGL 14-001-060 University of Chicago **1985**
Study of comet tails by photoelectric spectrophotometry

<i>Period</i>	<i>Obligations</i>	
05/18/65-08/31/74	FY75: \$147,516	TOTAL: \$147,516
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Adams, T.	HQ-SG/Dubin, M.	11-Astronomy
(10-850 188-00-00)		

**NASA'S UNIVERSITY PROGRAM
ILLINOIS (Continued)**

NGL 14-001-167 University of Chicago 1986
Lunar sample analysis
Period Obligations
03/29/72-01/31/78 FY75: \$202,700 TOTAL: \$958,830
Prin. Invest. NASA Tech. Officer CASE Category
Anders, E. JSC/Harris, J. W. 13-Physics
(72-810 388-10-02)

NGL 14-001-169 University of Chicago 1987
Lunar sample analysis
Period Obligations
01/19/71-01/31/78 FY75: \$82,150 TOTAL: \$369,830
Prin. Invest. NASA Tech. Officer CASE Category
Clayton, R. N. JSC/Harris, J. W. 12-Chemistry
(72-810 388-10-02) (72-910 914-40-00)

NGL 14-001-171 University of Chicago 1988
Lunar sample analysis
Period Obligations
01/19/71-01/31/78 FY75: \$55,000 TOTAL: \$332,000
Prin. Invest. NASA Tech. Officer CASE Category
Smith, J. V. JSC/Harris, J. W. 13-Physics
(72-810 388-10-01)

NGL 14-001-258 University of Chicago 1989
Advanced technical developments in support of scientific experiments in space
Period Obligations
06/15/73-06/30/77 FY75: \$200,000 TOTAL: \$600,000
Prin. Invest. NASA Tech. Officer CASE Category
Simpson, J. A. HQ-P/Redding, E. R. 99-Multi-Discip
(10-371 340-00-00)

NGR 14-001-008 University of Chicago 1990
Meteorological interpretation of satellite radiation data
Period Obligations
09/01/70-09/30/75 FY75: \$265,000 TOTAL: \$931,000
Prin. Invest. NASA Tech. Officer CASE Category
Fujita, T. T. GSFC/Shenk, W. E. 31-Atmos Sci
(51-620 646-22-00) (51-680 175-21-43) (51-680 175-51-45)

NGR 14-001-135 University of Chicago 1991
Feasibility of the alpha scattering technique for Martian surface analysis
Period Obligations
02/25/69-06/30/75 FY75: \$20,000 TOTAL: \$479,852
Prin. Invest. NASA Tech. Officer CASE Category
Turkevich, A. L. HQ-SL/Dwornik, S. E. 32-Geological Sci
(10-840 185-50-81) (10-840 185-00-00)

NGR 14-001-147 University of Chicago 1992
Interferometric high-resolution spectroscopy of optical interstellar lines
Period Obligations
03/18/70-12/31/75 FY75: \$24,567 TOTAL: \$146,774
Prin. Invest. NASA Tech. Officer CASE Category
Hobbs, L. M. HQ-SG/Rosendhal, J. D. 11-Astronomy
HQ-SG/Roman, N. G.
(10-850 188-41-51) (10-850 188-00-00)

NGR 14-001-164 University of Chicago 1993
Spectral measurement of the X-ray emission from nonflare solar active region
Period Obligations
05/19/70-12/31/75 FY75: TOTAL: \$651,065
Prin. Invest. NASA Tech. Officer CASE Category
Blake, R. L. HQ-SG/Weldon, J. M. 11-Astronomy
HQ-SG/Jordan, S. D.
(10-850 879-11-00)

NGR 14-001-194 University of Chicago 1994
Quantitative spectroscopy of planetary atmospheres
Period Obligations
07/20/71-04/14/78 FY75: \$99,180 TOTAL: \$156,037
Prin. Invest. NASA Tech. Officer CASE Category
Kaplan, L. D. HQ-SL/Fellows, R. F. 31-Atmos Sci
HQ-SL/Brunk, W. E.
(10-840 185-47-81)

NGR 14-001-203 University of Chicago 1995
Origin of organic compounds in meteorites
Period Obligations
08/17/71-09/30/74 FY75: TOTAL: \$105,000
Prin. Invest. NASA Tech. Officer CASE Category
Anders, E. HQ-SL/Young, R. S. 32-Geological Sci
(10-840 192-55-62)

NGR 14-001-211 University of Chicago 1996
Far infrared photometry of H 11 regions and planets using the NASA 30 cm flying infrared telescope
Period Obligations
02/14/72-11/01/75 FY75: \$63,912 TOTAL: \$176,000
Prin. Invest. NASA Tech. Officer CASE Category
Harper, D. A. ARC/Cameron, R. M. 11-Astronomy
ARC/Mason, R. H.
(21-850 352-02-01) (21-975 977-10-64) (21-980 975-50-01)

NGR 14-001-225 University of Chicago 1997
Physiology of the vestibular system of the squirrel monkey
Period Obligations
05/12/67-08/31/76 FY75: \$60,000 TOTAL: \$217,893
Prin. Invest. NASA Tech. Officer CASE Category
Goldberg, J. M. ARC/Daunton, N. G. 51-Biology
Fernandez, C. ARC/Mehler, W. R.
(21-970 970-21-11) (21-970 970-21-53)

NGR 14-001-227 University of Chicago 1998
Photometry of galactic and extragalactic far infrared sources using the 91.5 cm airborne infrared telescope
Period Obligations
02/27/73-03/01/76 FY75: \$90,000 TOTAL: \$224,174
Prin. Invest. NASA Tech. Officer CASE Category
Harper, D. A. ARC/Cameron, R. M. 11-Astronomy
ARC/Gillespie, C. M., Jr.
(21-850 352-02-03)

NGR 14-001-249 University of Chicago 1999
Physical properties of solar nebula as deduced from chondrites
Period Obligations
05/14/73-03/31/76 FY75: \$65,437 TOTAL: \$138,496
Prin. Invest. NASA Tech. Officer CASE Category
Grossman, L. HQ-SM/Stuart-Alexander, D. E. 32-Geological Sci
HQ-SM/Roberson, F. I.
(10-810 195-20-04) (10-810 195-00-00)

**NASA'S UNIVERSITY PROGRAM
ILLINOIS (Continued)**

NGR 14-001-250 **University of Chicago** **2000**
Development of an alpha scattering instrument for heavy element
detection in surface materials

<i>Period</i>	<i>Obligations</i>	
06/20/73-06/15/74	FY75:	TOTAL: \$35,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Turkevich, A. L.	HQ-SL/Dwornik, S. E.	13-Physics
(10-250 141-93-02)		

NSG 2057 **University of Chicago** **2001**
Study of sensitive detection system for far infrared astronomy

<i>Period</i>	<i>Obligations</i>	
12/01/74-11/30/75	FY75: \$25,000	TOTAL: \$25,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hildebrand, R. H.	ARC/Cameron, R. M.	11-Astronomy
Harper, D. A.	ARC/Gillespie, C. M., Jr.	
Stuenling, R.		
(21-850 352-02-03)		

NSG 5068 **University of Chicago** **2002**
High resolution observations of the diffuse Lyman alpha sky
background

<i>Period</i>	<i>Obligations</i>	
07/01/75-06/30/76	FY75: \$8,527	TOTAL: \$8,527
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Adams, T. E.	GSFC/Kupperian, J. E.	11-Astronomy
(51-850 831-42-00)		

NSG 1150 **University of Illinois - Chicago Circle** **2003**
A kinetic-theory approach to turbulent mixing and combustion

<i>Period</i>	<i>Obligations</i>	
03/01/75-02/28/76	FY75: \$42,531	TOTAL: \$42,531
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chung, P. M.	LARC/Evans, J. S.	41-Aero Engr
(23-702 505-05-41)		

NAS 2-7722 **University of Illinois - Urbana** **2004**
Interactive graphics display system

<i>Period</i>	<i>Obligations</i>	
06/29/73-06/30/75	FY75: \$141,162	TOTAL: \$378,134
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sher, M. S.	ARC/Hart, J. P.	21-Mathematics
	ARC/Fisher, D. L.	
(21-030 997-00-00)	(21-701 791-93-15)	(21-702 743-65-11)

NAS 5-23334 **University of Illinois - Urbana** **2005**
A prototype array processor for the IBM 360/95 computer

<i>Period</i>	<i>Obligations</i>	
03/06/74-09/01/75	FY75: \$39,067	TOTAL: \$93,306
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Slotnick, D.	GSFC/Schneck, P. B.	21-Mathematics
Graham, M.		
(51-680 611-13-00)		

NGL 14-005-074 **University of Illinois - Urbana** **2006**
Physiological responses of central vestibular pathways and diffuse
ascending systems to vestibular stimulation

<i>Period</i>	<i>Obligations</i>	
11/15/65-01/01/75	FY75:	TOTAL: \$931,044
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ades, H. W.	HQ-MM/Jones, W. L.	52-Clinical Med
(10-704 501-09-02)		

NGL 14-005-140 **University of Illinois - Urbana** **2007**
Research on fluid dynamic and heat transfer problems of modern
air breathing propulsive systems

<i>Period</i>	<i>Obligations</i>	
05/23/69-05/31/78	FY75: \$30,000	TOTAL: \$192,661
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chow, W. L.	LERC/Bober, L. J.	41-Aero Engr
Korst, H. H.		
(22-702 505-04-11)	(22-760 720-00-00)	

NGR 14-005-144 **University of Illinois - Urbana** **2008**
Determination of multiple element airfoil geometries for
maximizing lift coefficient

<i>Period</i>	<i>Obligations</i>	
01/30/70-11/30/76	FY75:	TOTAL: \$209,700
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ormsbee, A. I.	LARC/Morgan, H. L., Jr.	41-Aero Engr
(23-702 760-63-00)	(23-702 760-63-02)	(23-704 501-06-05)

NGR 14-005-149 **University of Illinois - Urbana** **2009**
Study of local pressure field in turbulent shear flow and its relation
to aerodynamic noise generation

<i>Period</i>	<i>Obligations</i>	
02/10/70-07/31/75	FY75: \$41,009	TOTAL: \$195,040
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jones, B. G.	LERC/Karchmer, A. M.	41-Aero Engr
	LERC/Dorsch, R. G.	
(22-702 505-03-11)	(22-762 132-00-00)	

NGR 14-005-176 **University of Illinois - Urbana** **2010**
Investigation of the atmosphere of Jupiter by studying the
ammonia feature at a wavelength of 1.26 cm

<i>Period</i>	<i>Obligations</i>	
05/22/72-07/31/76	FY75: \$9,544	TOTAL: \$28,513
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dickel, J. R.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Fellows, R. F.	
(10-840 196-41-82)	(10-840 196-00-00)	

NGR 14-005-177 **University of Illinois - Urbana** **2011**
Studies of local pressure and velocity fields in large scale subsonic
facilities, including simple jets & variable by-pass jets, and their
relation to aerodynamic noise generation

<i>Period</i>	<i>Obligations</i>	
05/25/71-12/15/74	FY75:	TOTAL: \$47,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jones, B. G.	LERC/Karchmer, A. M.	41-Aero Engr
(22-760 126-00-00)		

NGR 14-005-181 **University of Illinois - Urbana** **2012**
Rocket studies of the lower ionosphere

<i>Period</i>	<i>Obligations</i>	
08/01/71-07/31/75	FY75: \$449,817	TOTAL: \$1,674,817
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bowhill, S. A.	HQ-SG/Schmerling, E. R.	19-Phys Sci, NEC
	WFC/Milliner, C. F., Jr.	
(53-850 879-11-00)		

**NASA'S UNIVERSITY PROGRAM
ILLINOIS (Continued)**

NGR 14-005-183 University of Illinois - Urbana **2013**
A theoretical investigation of nuclear induced plasma kinetics
Period *Obligations*
12/07/71-10/31/74 **FY75:** **TOTAL: \$46,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Miley, G. H. HQ-NS/Thom, K. 12-Chemistry
(10-704 503-10-03) (45-720 112-00-00)

NGR 14-005-193 University of Illinois - Urbana **2014**
High intensity combustion and nitrous oxide formation in a turbine engine combustor
Period *Obligations*
06/22/72-06/30/76 **FY75:** **TOTAL: \$50,936**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Strehlow, R. A. LERC/Marek, C. J. 41-Aero Engr
(22-760 136-00-00) (22-704 501-15-83)

NGR 14-005-194 University of Illinois - Urbana **2015**
Low noise level general aviation propeller
Period *Obligations*
11/09/72-09/14/75 **FY75: \$50,354** **TOTAL: \$142,854**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ormsbee, A. I. LARC/Stickle, J. W. 41-Aero Engr
Sivier, K. R. LARC/Crane, H. L.
(23-702 505-03-12) (23-704 501-24-01)

NGR 14-005-200 University of Illinois - Urbana **2016**
Studies of discharge mechanisms occurring in high pressure gases with applications to high efficiency high power lasers
Period *Obligations*
04/06/73-04/30/76 **FY75: \$40,000** **TOTAL: \$104,860**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Verdeyen, J. T. LERC/Dunning, J. W., Jr. 13-Physics
Cherrington, B. E.
(22-704 759-11-43) (22-704 502-11-01)

NGR 14-005-202 University of Illinois - Urbana **2017**
Implementation of ILLIAC IV algorithms for multispectral image interpretation
Period *Obligations*
02/27/73-11/30/75 **FY75: \$82,654** **TOTAL: \$181,654**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ray, R. M. ARC/Slye, R. E. 21-Mathematics
ARC/Deerwester, J. M.
(21-030 997-00-00) (21-680 177-11-11) (21-680 177-52-14)

NGR 14-005-221 University of Illinois - Urbana **2018**
Quantitative studies of hair cells and nerve endings in the maculae and cochleae of animals, and in the vestibular and cochlear nuclei
Period *Obligations*
01/01/74-10/01/76 **FY75: \$34,965** **TOTAL: \$74,957**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ades, H. W. ARC/Mehler, W. R. 53-Other Medical
(21-970 970-21-11)

NSG 1063 University of Illinois - Urbana **2019**
Nuclear induced plasma kinetics
Period *Obligations*
06/01/74-05/31/76 **FY75: \$28,500** **TOTAL: \$54,500**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Miley, G. H. LARC/Hohl, F. 13-Physics
(23-704 502-12-02) (23-704 502-10-01)

NSG 3008 University of Illinois - Urbana **2020**
The analysis of the structure of blast waves from accidental explosions
Period *Obligations*
05/10/74-06/01/76 **FY75: \$50,000** **TOTAL: \$99,845**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Strehlow, R. A. LERC/Siewert, R. D. 13-Physics
(22-704 502-28-04)

NSG 3043 University of Illinois - Urbana **2021**
The effect of a zero g environment on flammability limits as determined using a standard flammability tube apparatus
Period *Obligations*
05/21/75-05/20/76 **FY75: \$25,000** **TOTAL: \$25,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Strehlow, R. A. LERC/Cochran, T. H. 43-Chem Engr
(22-704 750-01-51)

NSG 3056 University of Illinois - Urbana **2022**
Explosion, deflagration and fragmentation
Period *Obligations*
05/21/75-05/20/76 **FY75: \$25,000** **TOTAL: \$25,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Strehlow, R. A. LERC/Siewert, R. D. 49-Engr, NEC
(22-704 506-91-10)

NSG 5049 University of Illinois - Urbana **2023**
Effects of atmospheric refraction and turbulence on the accuracy of laser systems
Period *Obligations*
02/01/75-01/31/76 **FY75: \$24,777** **TOTAL: \$24,777**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gardner, C. S. GSFC/Buuton, J. L. 19-Phys Sci, NEC
Rao, N. N. GSFC/Fitzmaurice, M. W.
(51-630 639-10-00)

NSG 7030 University of Illinois - Urbana **2024**
Research in long baseline interferometry using a communications satellite
Period *Obligations*
06/01/74-12/31/74 **FY75:** **TOTAL: \$1,500**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Swenson, G. W. HQ-SG/Rosendhal, J. D. 11-Astronomy
HQ-SG/Roman, N. G.
(10-850 188-41-52)

NSG 7044 University of Illinois - Urbana **2025**
Evolution of the cell and the translation process
Period *Obligations*
06/01/74-05/31/76 **FY75: \$35,000** **TOTAL: \$67,300**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Woese, C. R. HQ-SL/Young, R. S. 12-Chemistry
(10-840 192-55-61)

**NASA'S UNIVERSITY PROGRAM
INDIANA**

INDIANA

NCA 8-101 Ball State University 2026
Investigation of Fresnel lens utilization in collecting solar energy for power generation

<i>Period</i>	<i>Obligations</i>	
09/30/74-06/30/75	FY75: \$16,000	TOTAL: \$16,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cosby, R. M.	MSFC/Hastings, L. J.	13-Physics
(62-400 647-10-02)		

NCA 8-103 Ball State University 2027
An investigation of Fresnel lens utilization in collecting solar energy for power generation

<i>Period</i>	<i>Obligations</i>	
12/16/74-06/30/75	FY75: \$3,500	TOTAL: \$3,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cosby, R. M.	MSFC/Hastings, L. J.	13-Physics
(62-400 647-10-02)		

NASW 2353 Indiana University - Bloomington 2028
Regional Dissemination Center Operation in Aerospace Research Application Center

<i>Period</i>	<i>Obligations</i>	
05/16/72-11/01/73	FY75:	TOTAL: \$250,085
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Shriner, H.	HQ-KT/Holley, H. L.	99-Multi-Discip
(10-250 141-93-01)	(10-250 141-00-00)	

NASW 2467 Indiana University - Bloomington 2029
Regional Information Dissemination Center

<i>Period</i>	<i>Obligations</i>	
05/14/73-12/31/74	FY75:	TOTAL: \$422,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Shriner, H.	HQ-KT/Holley, H. L.	99-Multi-Discip
(10-250 141-93-01)	(10-250 141-00-00)	

NASW 2714 Indiana University - Bloomington 2030
Operation of a Regional Dissemination Center

<i>Period</i>	<i>Obligations</i>	
10/01/74-09/30/75	FY75: \$204,418	TOTAL: \$204,418
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Shriner, H.	HQ-KT/Holley, H. L.	99-Multi-Discip
(10-250 141-93-01)		

NCA 2-35501 Indiana University - Bloomington 2031
Meteorite contribution to the chemistry of organogenic elements

<i>Period</i>	<i>Obligations</i>	
04/01/75-01/31/76	FY75: \$13,500	TOTAL: \$13,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hayes, J.	ARC/Zill, L. P.	12-Chemistry
(21-810 388-10-02)		

NGL 15-003-002 Indiana University - Bloomington 2032
A theoretical investigation of the steady state interaction between radiation and matter in stellar atmospheres

<i>Period</i>	<i>Obligations</i>	
07/17/63-12/31/76	FY75: \$1,600	TOTAL: \$337,477
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Johnson, H. R.	HQ-SG/Bogges, N. W.	11-Astronomy
(10-850 188-41-51)	HQ-SG/Roman, N. G.	
	(10-850 188-00-00)	

NGL 15-003-077 Indiana University - Bloomington 2033
An experimental study of hearing loss and inner ear damage after exposure to sounds of high intensity

<i>Period</i>	<i>Obligations</i>	
05/27/68-12/31/75	FY75:	TOTAL: \$165,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gehrels, A. M.	ARC/Mehler, W. R.	59-Life Sci, NEC
(21-970 970-21-11)	(10-770 127-00-00)	(23-770 137-00-00)

NGL 15-003-117 Indiana University - Bloomington 2034
Study of effects of a stressful or abnormal environment on action of selected therapeutic drugs

<i>Period</i>	<i>Obligations</i>	
05/19/72-04/30/76	FY75:	TOTAL: \$165,467
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Maickel, R. P.	HQ-MM/Vinograd, S. P.	52-Clinical Med
(10-970 970-14-00)		

NGR 15-003-007 Indiana University - Bloomington 2035
Investigation of neurological correlates of information reception

<i>Period</i>	<i>Obligations</i>	
01/01/65-01/01/76	FY75:	TOTAL: \$133,823
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Neff, W. D.	ARC/Weisman, N. W.	51-Biology
(10-870 189-00-00)	(21-870 189-00-00)	

NGR 15-003-105 Indiana University - Bloomington 2036
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
01/26/71-01/31/76	FY75: \$27,383	TOTAL: \$150,683
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Meinschein, W. G.	JSC/Harris, J. W.	12-Chemistry
(72-810 388-10-02)	(72-810 388-10-04)	

NGR 15-003-118 Indiana University - Bloomington 2037
Application of ultra-high sensitivity isotope ratio mass spectrometry to organic geochemistry and cosmochemistry

<i>Period</i>	<i>Obligations</i>	
06/20/72-05/31/75	FY75:	TOTAL: \$175,966
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hayes, J. M.	HQ-SL/Young, R. S.	32-Geological Sci
(10-840 192-55-62)	(10-840 192-00-00)	

NAS 2-7927 Indiana Univ. - Indianapolis 2038
Radiobiological tests on mouse tissue

<i>Period</i>	<i>Obligations</i>	
01/01/74-12/31/76	FY75:	TOTAL: \$23,621
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Zeman, W.	ARC/Haymaker, W. E.	51-Biology
(21-970 970-00-00)		

NAS 3-18010 Purdue University 2039
Research on multiple pure tone noise on a supersonic rotor propagating in an acoustically treated duct

<i>Period</i>	<i>Obligations</i>	
08/13/73-11/12/75	FY75:	TOTAL: \$38,742
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Vaidya, P. G.	LERC/Minner, G. L.	41-Aero Engr
(22-704 501-04-01)		

**NASA'S UNIVERSITY PROGRAM
INDIANA (Continued)**

NAS 5-20793 **Purdue University** **2040**
 Analysis of data for ERTS follow-on investigation
Period *Obligations*
 03/25/75-01/25/77 **FY75: \$120,000 TOTAL: \$120,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Bauer, M. E. GSFC/Stonesifer, G. R. 59-Life Sci, NEC
 (51-680 641-15-00)

NAS 5-20922 **Purdue University** **2041**
 Support for GSFC remote terminal connecting the Purdue/Lars computer
Period *Obligations*
 01/01/75-12/31/75 **FY75: \$15,000 TOTAL: \$15,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Phillips, T. L. GSFC/Pritchard, J. A. 49-Engr, NEC
 (51-680 177-42-41)

NAS 5-21773 **Purdue University** **2042**
 A study of the utilization of ERTS-A data from the Wabash River Basin
Period *Obligations*
 06/27/72-01/01/75 **FY75: \$1,929 TOTAL: \$204,887**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 McDonald, R. B. GSFC/Freden, S. C. 39-Env Sci, NEC
 (51-680 641-14-01)

NAS 5-21785 **Purdue University** **2043**
 ERTS-A data analysis
Period *Obligations*
 06/30/72-07/01/74 **FY75: \$627 TOTAL: \$59,417**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Baumgardner, M. F. GSFC/Freden, S. C. 19-Phys Sci, NEC
 (51-680 641-14-01)

NAS 5-21880 **Purdue University** **2044**
 Interdisciplinary analysis of ERTS data for Colorado Mountains environments using ADP techniques
Period *Obligations*
 06/30/72-11/15/74 **FY75: TOTAL: \$186,132**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Bouchillon, C. W. GSFC/Freden, S. C. 99-Multi-Discip
 (51-680 641-14-07)

NAS 6-2613 **Purdue University** **2045**
 Services in support of Lars remote data terminal
Period *Obligations*
 01/02/75-07/31/75 **FY75: \$16,211 TOTAL: \$16,211**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Phillips, T. L. WFC/Maurer, H. E. 39-Env Sci, NEC
 WFC/Hancock, D. W.
 (53-680 177-32-61) (53-704 502-23-32)

NAS 9-13301 **Purdue University** **2046**
 Study of utilization of EREP data from Wabash River Basin
Period *Obligations*
 05/07/73-09/30/75 **FY75: \$43,832 TOTAL: \$140,992**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Silva, L. F. JSC/Joosten, R. E. 39-Env Sci, NEC
 (72-680 652-01-85)

NAS 9-13380 **Purdue University** **2047**
 Description and interdisciplinary analysis of multispectral satellite data for selected cover types in Colorado Mountains, using ADP techniques
Period *Obligations*
 04/30/73-06/30/76 **FY75: \$124,531 TOTAL: \$215,181**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Hoffer, R. M. JSC/Joosten, R. E. 39-Env Sci, NEC
 (72-680 652-01-85)

NAS 9-14016 **Purdue University** **2048**
 Applications of remote sensing
Period *Obligations*
 06/01/74-05/31/76 **FY75: \$1,429,055 TOTAL: \$1,765,490**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Landgrebe, D. A. JSC/Potter, A. E. 39-Env Sci, NEC
 (72-680 177-42-83) (72-680 176-53-32)

NCA 2-05501 **Purdue University** **2049**
 Combined analytical-experimental investigation of short, annular, subsonic diffusers
Period *Obligations*
 01/21/75-01/20/76 **FY75: \$12,380 TOTAL: \$12,380**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Smith, C. R. ARC/Zill, L. P. 41-Aero Engr
 (21-702 505-04-11) (21-704 501-24-05)

NGL 15-005-003 **Purdue University** **2050**
 Research on high precision spectroscopy with particular emphasis on the development of electronic digital computer methods
Period *Obligations*
 10/01/62-01/01/75 **FY75: TOTAL: \$589,068**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Andrew, K. L. HQ-SG/Roman, N. G. 11-Astronomy
 HQ-SG/Oertel, G. K.
 (10-850 188-41-51) (10-850 188-00-00)

NGL 15-005-140 **Purdue University** **2051**
 Origin of chondrites from relationships between fourteen key trace elements
Period *Obligations*
 06/21/71-02/28/78 **FY75: \$100,000 TOTAL: \$257,437**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Lipschutz, M. E. HQ-SM/Bryson, R. P. 32-Geological Sci
 (10-810 195-20-04)

NGL 15-005-175 **Purdue University** **2052**
 Lunar sample analysis
Period *Obligations*
 02/01/73-01/31/76 **FY75: TOTAL: \$19,331**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Taylor, L. A. JSC/Harris, J. W. 13-Physics
 (72-910 914-40-00)

NGL 15-005-186 **Purdue University** **2053**
 Application of remote sensing technology to solution of problems in management of resources
Period *Obligations*
 06/19/73-05/31/78 **FY75: \$200,000 TOTAL: \$795,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Weismiller, R. A. HQ-P/Vitale, J. A. 39-Env Sci, NEC
 (10-371 340-00-00)

**NASA'S UNIVERSITY PROGRAM
IOWA (Continued)**

NCA 2-40601 Iowa State University 2081
Simulation of the eolian modification of Martian craters
Period Obligations
09/01/75-08/31/76 FY75: \$10,000 TOTAL: \$10,000
Prin. Invest. NASA Tech. Officer CASE Category
Iversen, J. D. ARC/Zill, L. P. 32-Geological Sci
(21-840 185-50-60)

NGR 16-002-038 Iowa State University 2082
Calculation of viscous compressible flow
Period Obligations
10/07/71-11/15/75 FY75: \$22,025 TOTAL: \$70,557
Prin. Invest. NASA Tech. Officer CASE Category
Tannehill, J. C. ARC/Rakich, J. V. 41-Aero Engr
Holst, T. L. ARC/Marvin, J. G.
(21-704 502-37-01) (21-742 117-00-00)

NSG 2040 Iowa State University 2083
Role of turbulence in vortex wake decay
Period Obligations
09/01/74-09/01/75 FY75: \$39,955 TOTAL: \$39,955
Prin. Invest. NASA Tech. Officer CASE Category
Wilson, L. N. ARC/Rossow, V. J. 41-Aero Engr
Iverson, J. D. ARC/Kelly, M. W.
(21-702 514-52-01) (21-704 501-38-13)

NSG 2091 Iowa State University 2084
Study of viscous cross-flow effects on cylinders at high Reynolds numbers
Period Obligations
07/01/75-01/01/77 FY75: \$34,500 TOTAL: \$34,500
Prin. Invest. NASA Tech. Officer CASE Category
James, W. D. ARC/Chapman, G. T. 41-Aero Engr
ARC/Malcolm, G. N.
(21-704 501-26-04)

NSG 3033 Iowa State University 2085
Blade surface boundary layer and wake computation model study
Period Obligations
09/01/74-08/31/77 FY75: \$44,493 TOTAL: \$44,493
Prin. Invest. NASA Tech. Officer CASE Category
Serovy, G. K. LERC/Sockol, P. M. 41-Aero Engr
(22-704 501-15-83)

NAS 1-13129 University of Iowa 2086
Hawkeye/neutral point Explorer experiments
Period Obligations
05/20/74-08/03/76 FY75: \$269,617 TOTAL: \$745,617
Prin. Invest. NASA Tech. Officer CASE Category
Van Allen, J. A. LARC/Coffee, C. W., Jr. 13-Physics
Frank, L. A.
Gurnett, D. A. (23-850 863-11-00) (23-850 863-00-00)

NAS 2-6553 University of Iowa 2087
Pioneer F/G data analysis. Jovian charged particles experiment
Period Obligations
07/21/71-06/30/75 FY75: \$107,000 TOTAL: \$340,425
Prin. Invest. NASA Tech. Officer CASE Category
Van Allen, J. A. ARC/Hall, C. F. 11-Astronomy
ARC/Porter, D. L.
(21-840 811-22-00)

NAS 5-11039 University of Iowa 2088
IMP-1 low energy electron and proton experiment
Period Obligations
06/19/68-06/30/75 FY75: \$4,300 TOTAL: \$318,000
Prin. Invest. NASA Tech. Officer CASE Category
Frank, L. A. GSFC/Davis, M. A. 13-Physics
(51-850 861-52-00)

NAS 5-11064 University of Iowa 2089
Low energy electrons and protons experiment for IMP-H & J
Period Obligations
05/31/68-12/31/76 FY75: \$156,656 TOTAL: \$736,656
Prin. Invest. NASA Tech. Officer CASE Category
Frank, L. A. GSFC/Davis, M. A. 13-Physics
(51-850 861-42-00)

NAS 5-11074 University of Iowa 2090
Low-frequency radio noise experiment
Period Obligations
04/19/68-06/30/75 FY75: TOTAL: \$543,610
Prin. Invest. NASA Tech. Officer CASE Category
Gurnett, D. A. GSFC/Madden, J. J. 11-Astronomy
GSFC/Butler, P.
(51-850 861-41-00)

NAS 5-11167 University of Iowa 2091
Ac electric fields experiment for S3A
Period Obligations
09/25/68-06/30/75 FY75: TOTAL: \$316,202
Prin. Invest. NASA Tech. Officer CASE Category
Gurnett, D. A. GSFC/Denwiddie, M. 13-Physics
(51-850 857-12-00)

NAS 5-11265 University of Iowa 2092
UK-4 low energy proton and electron differential energy analyzer experiment
Period Obligations
01/30/70-12/31/75 FY75: \$12,918 TOTAL: \$453,312
Prin. Invest. NASA Tech. Officer CASE Category
Frank, L. A. GSFC/Eaker, H. L. 13-Physics
Craven, J. D.
Yeager, D. M.
(51-850 870-42-00)

NAS 5-11279 University of Iowa 2093
Solar wind plasma wave experiment for the Helios missions
Period Obligations
03/30/70-02/01/79 FY75: \$176,000 TOTAL: \$1,085,645
Prin. Invest. NASA Tech. Officer CASE Category
Gurnett, D. A. GSFC/White, C. E. 11-Astronomy
(51-840 823-12-00)

NAS 5-11431 University of Iowa 2094
Ac electric and magnetic fields experiment
Period Obligations
05/21/71-10/31/76 FY75: \$164,926 TOTAL: \$537,926
Prin. Invest. NASA Tech. Officer CASE Category
Gurnett, D. A. GSFC/Davis, M. A. 31-Atmos Sci
(51-850 861-42-00)

NASA'S UNIVERSITY PROGRAM

IOWA (Continued)

NAS 5-20093 University of Iowa **2095**
Plasma wave experiment for International Sun-Earth Explorer spacecraft A&B

<i>Period</i>	<i>Obligations</i>	
05/20/74-10/31/79	FY75: \$268,477	TOTAL: \$313,477
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gurnett, D. A.	GSFC/Davis, M. A.	13-Physics
(51-850 862-12-00)		

NAS 5-20094 University of Iowa **2096**
Magnetospheric and interplanetary plasma for International Sun-Earth Explorer mother & daughter spacecraft

<i>Period</i>	<i>Obligations</i>	
05/20/74-10/30/79	FY75: \$302,642	TOTAL: \$312,642
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Frank, L. A.	GSFC/Davis, M. A.	13-Physics
(51-850 862-12-00)		

NAS 5-20539 University of Iowa **2097**
Spacecraft control and telemetry station operations

<i>Period</i>	<i>Obligations</i>	
06/03/74-08/02/76	FY75: \$199,457	TOTAL: \$451,457
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Van Allen, J. A.	GSFC/Allen, R. F., Jr.	11-Astronomy
Frank, L. A.	GSFC/Sanford, R. G.	
Gurnett, D. A.		
(51-500 311-07-13)		

NAS 5-21852 University of Iowa **2098**
Evaluation of ERTS imagery for tectonic analysis

<i>Period</i>	<i>Obligations</i>	
09/15/72-08/01/74	FY75:	TOTAL: \$29,786
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hoppin, R. A.	GSFC/Stonesifer, G.R.	32-Geological Sci
Baker, R. G.		
(51-680 641-00-00)		

NAS 9-13313 University of Iowa **2099**
Investigation of Skylab data EREP no. 393

<i>Period</i>	<i>Obligations</i>	
03/09/73-06/30/76	FY75: \$17,000	TOTAL: \$34,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hoppin, R. A.	JSC/Miller, M. L.	32-Geological Sci
(72-680 652-01-83)	(72-680 177-91-00)	

NGL 16-001-002 University of Iowa **2100**
Theoretical & experimental studies related to particles & fields associated with major bodies of solar system & with interplanetary space

<i>Period</i>	<i>Obligations</i>	
05/23/62-11/30/77	FY75: \$240,000	TOTAL: \$4,334,196
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Van Allen, J. A.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Schmerling, E. R.	
(10-850 188-36-55)	(10-850 188-00-00)	

NGL 16-001-043 University of Iowa **2101**
Waves in plasmas

<i>Period</i>	<i>Obligations</i>	
03/28/67-11/30/77	FY75: \$55,000	TOTAL: \$632,986
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Montgomery, D. C.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Schmerling, E. R.	
(10-850 188-36-56)		

KANSAS

NAS 9-14282 Kansas State University **2102**
A winter wheat yield model

<i>Period</i>	<i>Obligations</i>	
08/01/74-01/31/76	FY75: \$114,000	TOTAL: \$114,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Feyerherm, A. M.	JSC/Pitts, D. E.	39-Env Sci, NEC
Kanemasu, E. T.		
(72-680 177-51-82)	(72-680 658-10-20)	

NAS 9-14533 Kansas State University **2103**
Prediction of wheat yield

<i>Period</i>	<i>Obligations</i>	
02/15/75-03/31/76	FY75: \$80,000	TOTAL: \$80,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Feyerherm, A. M.	JSC/Barnett, T. L.	39-Env Sci, NEC
	JSC/Potter, A. E.	
(72-680 658-10-20)		

NCA 2-63501 Kansas State University **2104**
Image enhancement and classification techniques

<i>Period</i>	<i>Obligations</i>	
06/06/75-12/31/75	FY75: \$5,000	TOTAL: \$5,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ahmed, N.	ARC/Zill, L. P.	45-Elec Engr
(21-620 650-60-10)		

NGL 17-001-026 Kansas State University **2105**
Infrared laboratory studies of synthetic planetary atmospheres

<i>Period</i>	<i>Obligations</i>	
01/10/67-11/30/77	FY75: \$20,500	TOTAL: \$227,554
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Williams, D. P.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	
(10-840 185-47-83)	(10-840 185-00-00)	

NAS 1-10048 University of Kansas **2106**
Development of a composite Radiometer Scatterometer (RADSCAT) experiment and design of aircraft experiment & development of radar backscatter theory

<i>Period</i>	<i>Obligations</i>	
06/02/70-01/31/75	FY75: \$10,495	TOTAL: \$218,476
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Moore, R. K.	LARC/Schroeder, L. C.	99-Multi-Discip
(23-630 161-05-07)	(23-620 630-52-00)	

NAS 1-12976 University of Kansas **2107**
Compressible vortex flow characteristics

<i>Period</i>	<i>Obligations</i>	
07/01/74-07/15/76	FY75:	TOTAL: \$39,395
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Muirhead, V. U.	LARC/Ward, J. F.	41-Aero Engr
(23-702 760-63-02)		

NAS 2-8556 University of Kansas **2108**
Investigation of probe buffeting problem at low subsonic mach numbers

<i>Period</i>	<i>Obligations</i>	
09/20/74-07/31/75	FY75: \$25,134	TOTAL: \$25,134
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Muirhead, V. V.	ARC/Seiff, A.	42-Astro Engr
(21-840 185-47-68)		

**NASA'S UNIVERSITY PROGRAM
KANSAS (Continued)**

NAS 4-2148	University of Kansas	2109	NAS 9-13273	University of Kansas	2116
Flight test program of an attitude command control system and report of findings			Investigation of Skylab data EREP no. 540A		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
02/01/74-12/31/75	FY75: \$325,000	TOTAL: \$617,000	03/19/73-08/30/75	FY75: \$54,284	TOTAL: \$115,452
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Roskam, J.	FRC/Gee, S. W.	41-Aero Engr	Eagleman, J. R.	JSC/Forbes, C. D.	19-Phys Sci, NEC
(24-702 505-00-00)	(24-702 505-07-21)	(24-702 505-10-13)	(72-680 652-01-82)		
NAS 5-20943	University of Kansas	2110	NAS 9-13331	University of Kansas	2117
Analysis of data for ERTS follow-on investigation			Investigation of Skylab data EREP no. 549m		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
03/10/75-01/10/77	FY75: \$52,000	TOTAL: \$52,000	03/26/73-09/30/75	FY75: \$68,393	TOTAL: \$138,676
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Haralick, R. M.	GSFC/Broderick, J.	32-Geological Sci	Moore, R. K.	JSC/York, L. B.	19-Phys Sci, NEC
(51-680 641-15-00)			(72-960 948-63-86)	(72-680 652-01-86)	
NAS 5-21822	University of Kansas	2111	NAS 9-13347	University of Kansas	2118
A Kansas environmental and resource study using ERTS-A data			Engineering & scientific support to S193 radiometer/scatterometer		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
08/01/72-09/01/74	FY75:	TOTAL: \$377,606	02/12/73-07/31/75	FY75: \$105,500	TOTAL: \$385,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kanemasu, E. T.	GSFC/Stonesifer, G. R.	39-Env Sci, NEC	Moore, R. K.	JSC/Pratt, B. W.	49-Engr, NEC
(51-680 641-14-03)	(51-680 641-14-07)	(51-680 641-14-08)	Holtzman, J. C.		
			(72-960 948-80-81)	(72-960 948-80-82)	
NAS 5-22325	University of Kansas	2112	NAS 9-14052	University of Kansas	2119
Earth observation radar concept study			Joint soil moisture experiment		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
04/18/75-04/17/76	FY75: \$30,395	TOTAL: \$30,395	04/01/74-03/31/76	FY75: \$44,000	TOTAL: \$92,243
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Moore, R. K.	GSFC/Eckerman, J.	32-Geological Sci	Ulaby, F. T.	JSC/Mason, C. C.	39-Env Sci, NEC
(51-601 645-10-02)	(51-601 644-03-10)		(72-680 177-51-84)	(72-680 177-00-00)	
NAS 5-22384	University of Kansas	2113	NAS 9-14453	University of Kansas	2120
Synthetic aperture radar water resource study			Development of textural/spatial pattern recognition techniques		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/19/75-07/30/76	FY75: \$26,427	TOTAL: \$26,427	12/15/74-12/15/75	FY75: \$49,982	TOTAL: \$49,982
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Moore, R. K.	GSFC/Shive, J. C.	32-Geological Sci	Haralick, R. M.	JSC/Erb, R. B.	39-Env Sci, NEC
(51-680 683-75-31)				JSC/Weitz, P. J.	
			(72-680 177-51-81)		
NAS 9-10261	University of Kansas	2114	NGL 17-004-024	University of Kansas	2121
Radar systems studies			Research on the applications of satellite remote sensing		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/12/70-06/30/76	FY75: \$93,224	TOTAL: \$1,095,447	04/06/72-03/31/78	FY75: \$100,000	TOTAL: \$500,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ulaby, F. T.	JSC/Hatcher, N. M.	39-Env Sci, NEC	Barr, B. G.	HQ-P/Vitale, J. A.	39-Env Sci, NEC
(72-680 177-44-82)			(10-371 340-00-00)	(10-370 183-00-00)	
NAS 9-13271	University of Kansas	2115	NGR 17-002-072	University of Kansas	2122
Skylab study of water quality			Advanced technology applications for general aviation aircraft		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
02/23/73-06/30/75	FY75: \$8,949	TOTAL: \$31,449	10/14/69-09/16/76	FY75: \$71,273	TOTAL: \$909,280
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Yarger, H. L.	JSC/York, L. B.	19-Phys Sci, NEC	Kohlman, D. L.	LARC/Crane, H. L.	41-Aero Engr
(72-680 652-01-86)	(72-960 948-63-86)			LARC/Stickle, J. W.	
			(23-702 505-10-11)	(23-702 760-60-01)	

**NASA'S UNIVERSITY PROGRAM
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NGR 17-002-106	University of Kansas	2123			
Possible contemporaneous climate changes on Earth & Mars determined by Martian statistical geomorphology					
<i>Period</i>	<i>Obligations</i>				
08/30/72-05/31/76	FY75:	TOTAL: \$6,300			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Warnke, D. E.	HQ-SL/Dwornik, S. E.	32-Geological Sci			
(10-840 384-50-80)					
NGR 17-004-027	University of Kansas	2124			
An experimental investigation of lightning damage to selected composite materials and associated protective systems					
<i>Period</i>	<i>Obligations</i>				
05/18/72-12/31/75	FY75: \$13,078	TOTAL: \$49,217			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Lenzen, K. H.	LARC/Pride, R. A.	41-Aero Engr			
Lorenz, S. A.	LARC/Davis, J. G., Jr.				
(23-702 505-02-41)	(23-760 136-00-00)				
NSG 1046	University of Kansas	2125			
Effects of aeroelasticity on control effectiveness					
<i>Period</i>	<i>Obligations</i>				
06/10/74-10/15/75	FY75:	TOTAL: \$29,665			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Roskam, J.	LARC/Lamar, J. E.	41-Aero Engr			
	LARC/Henderson, W. P.				
(23-704 501-23-32)					
NSG 1122	University of Kansas	2126			
Measuring mode shapes of vibrating, rotating helicopter blades					
<i>Period</i>	<i>Obligations</i>				
11/13/74-07/31/76	FY75: \$20,472	TOTAL: \$20,472			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Lenzen, K. H.	LARC/Naumann, E. C.	41-Aero Engr			
Reese, C. D.	LARC/Hammond, C. E.				
(23-702 505-10-26)					
NSG 1139	University of Kansas	2127			
Further applications of a wing-jet interaction theory					
<i>Period</i>	<i>Obligations</i>				
01/01/75-12/31/75	FY75: \$27,312	TOTAL: \$27,312			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Lan, C. E.	LARC/Campbell, J. F.	41-Aero Engr			
(23-702 505-06-11)	(23-702 505-10-41)				
NSG 1142	University of Kansas	2128			
An analysis of infinite arrays for large microstrip antenna design					
<i>Period</i>	<i>Obligations</i>				
06/01/75-05/31/76	FY75: \$19,861	TOTAL: \$19,861			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Biggs, A. W.	LARC/Bailey, M. C.	45-Elec Engr			
Parks, F. G.	LARC/Croswell, W. F.				
(23-702 505-07-22)					
NSG 1175	University of Kansas	2129			
Definition of requirements for general aviation drag reduction research					
<i>Period</i>	<i>Obligations</i>				
05/01/75-09/30/75	FY75: \$8,891	TOTAL: \$8,891			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Roskam, J.	LARC/Hall, A. W.	41-Aero Engr			
(23-702 505-10-11)					
NSG 4004	University of Kansas	2130			
Ground vehicles					
<i>Period</i>	<i>Obligations</i>				
01/16/75-01/15/76	FY75: \$18,460	TOTAL: \$18,460			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Muirhead, V. U.	FRC/Horton, V. W.	49-Engr, NEC			
	FRC/Saltzman, E. J.				
(24-702 770-18-10)					
NSG 4006	University of Kansas	2131			
Structural analyses of ultra-high speed aircraft structural components					
<i>Period</i>	<i>Obligations</i>				
05/01/75-01/15/78	FY75: \$35,864	TOTAL: \$35,864			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Lenzen, K. H.	FRC/Fields, R. A.	41-Aero Engr			
Siegel, W.	FRC/Jenkins, J. M.				
(24-702 505-02-23)	(24-702 743-01-23)				
NSG 4007	University of Kansas	2132			
Modification and testing of a remotely augmented vehicle system					
<i>Period</i>	<i>Obligations</i>				
07/01/75-06/30/77	FY75: \$41,486	TOTAL: \$41,486			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Roskam, J.	ARC/Zill, L. P.	41-Aero Engr			
Grose, D.					
(24-704 501-33-00)					
NSG 17-003-018	Wichita State University	2133			
Numerical methods for the investigation of transmission and attenuation of sound in acoustically treated ducts					
<i>Period</i>	<i>Obligations</i>				
07/24/72-09/01/75	FY75:	TOTAL: \$49,420			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Eversman, W.	LERC/Rice, E. J.	13-Physics			
(22-704 501-24-01)	(22-704 501-04-01)				
NSG 17-003-021	Wichita State University	2134			
Experimental studies of flow separation and stalling on two-dimensional airfoils at low speeds. Phase I					
<i>Period</i>	<i>Obligations</i>				
12/01/73-08/31/76	FY75: \$62,378	TOTAL: \$86,900			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Wentz, W. H., Jr.	LARC/Noonan, K. W.	41-Aero Engr			
Seetharam, H. C.	LARC/McGhee, R. J.				
(23-702 505-06-31)					
NSG 1118	Wichita State University	2135			
Evaluation of spoiler effectiveness on a finite span, advanced technology general aviation wing with a large fowler flap					
<i>Period</i>	<i>Obligations</i>				
12/01/74-11/30/75	FY75: \$27,722	TOTAL: \$27,722			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Wentz, W. H., Jr.	LARC/Crane, H. L.	41-Aero Engr			
	LARC/Stickle, J. W.				
(23-702 505-10-11)					

**NASA'S UNIVERSITY PROGRAM
KENTUCKY (Continued)**

NSG 1111 University of Kentucky **2150**
Further development of a global pollution model for CO, Ch4,
and Ch2O
Period *Obligations*
11/01/74-10/31/75 **FY75: \$8,579 TOTAL: \$8,579**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Peters, L. K. LARC/Reichle, H. G., Jr. 31-Atmos Sci
LARC/Orr, H. D.
(23-680 176-21-31)

NSG 3013 University of Kentucky **2151**
Fracture toughness testing of beryllium
Period *Obligations*
07/01/74-06/30/76 **FY75: TOTAL: \$20,727**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Conrad, H. LERC/Brown, W. F., Jr. 47-Materials Engr
Sargent, G. A. LERC/Jones, M. H.
(22-704 501-01-06)

NAS 8-31233 University of Louisville **2152**
Turbopump technology improvements via transient rotordynamics
analysis
Period *Obligations*
11/14/74-02/14/76 **FY75: \$20,000 TOTAL: \$20,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Childs, D. A. MSFC/Gross, L. A. 42-Astro Engr
MSFC/Strong, J. S.
(62-920 983-15-00)

NAS 9-14632 University of Louisville **2153**
ASTP/Cosmos fundulus embryo development experiment
Period *Obligations*
04/14/75-06/15/76 **FY75: \$75,000 TOTAL: \$75,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Keefe, J. R. JSC/Hoffman, R. A. 51-Biology
(72-960 948-60-91) (72-970 970-54-01)

NSG 2067 University of Louisville **2154**
The efferent component of the vestibular nerve in the bullfrog
Period *Obligations*
02/15/75-02/15/76 **FY75: \$7,432 TOTAL: \$7,432**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Fuller, P. M. ARC/Mehler, W. R. 51-Biology
Prior, D. J.
(21-970 970-21-11)

LOUISIANA

NGR 19-015-001 Dillard University **2155**
Feasibility study of utilization of remote aerial sensing for
predicting urban neighborhood characteristics
Period *Obligations*
05/31/72-08/31/74 **FY75: TOTAL: \$25,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Rogers, R. HQ-P/Pohly, J. G. 39-Env Sci, NEC
(10-371 340-00-00)

NSG 8018 Dillard University **2156**
Vegetation types and conditions as revealed by aerial infrared
photography
Period *Obligations*
09/01/74-09/01/75 **FY75: \$24,180 TOTAL: \$24,180**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Rogers, R. MSFC/Paludan, C. T. 39-Env Sci, NEC
Roussell, N. MSFC/Kent, M. I.
(62-371 340-00-00)

NGR 19-011-007 Grambling State University **2157**
Study of low frequency hydromagnetic waves using ATS-1 data
Period *Obligations*
11/30/70-11/30/75 **FY75: \$18,072 TOTAL: \$66,695**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cummings, W. D. HQ-SG/Berko, F. W. 13-Physics
HQ-SG/Schmerling, E. R.
(10-850 385-36-00)

NGR 19-011-009 Grambling State University **2158**
Time exposure studies on stress corrosion cracking of aluminum
Period *Obligations*
04/06/71-11/30/74 **FY75: TOTAL: \$31,125**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Terrell, J. HQ-P/Pohly, J. G. 13-Physics
(62-950 951-00-00) (62-910 933-50-00) (10-371 340-00-00)

NGR 19-011-012 Grambling State University **2159**
Theoretical investigation of isotopic anomaly of xenon in
carbonaceous chondrites
Period *Obligations*
04/24/72-05/30/76 **FY75: TOTAL: \$33,540**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sabu, D. D. HQ-P/Pohly, J. G. 43-Chem Engr
JSC/Bogard, D. D.
(10-371 340-00-00)

NGR 19-011-016 Grambling State University **2160**
Distribution of extraionic electrons in semimetallic environments
by nuclear quadrupole resonance techniques
Period *Obligations*
11/14/72-01/01/76 **FY75: \$16,738 TOTAL: \$49,537**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Murty, A. N. MSFC/Kroes, R. L. 13-Physics
MSFC/Kent, M. I.
(62-371 340-00-00) (10-371 340-00-00)

NSG 9014 Grambling State University **2161**
Lymphoid cell kinetics
Period *Obligations*
08/01/74-07/31/75 **FY75: \$19,300 TOTAL: \$19,300**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Foster, B. R. JSC/Hoffman, R. A. 13-Physics
(72-371 340-00-00)

NAS 5-20883 Louisiana State University - Baton Rouge **2162**
High energy cosmic ray ionization spectrometer computer
simulations
Period *Obligations*
11/19/74-06/30/76 **FY75: \$20,000 TOTAL: \$20,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Huggett, R. W. GSFC/Ormes, J. F. 13-Physics
(51-850 188-46-64)

**NASA'S UNIVERSITY PROGRAM
LOUISIANA (Continued)**

NAS 5-23174 Louisiana State University - Baton Rouge 2163
HEAO-A experiment

<i>Period</i>	<i>Obligations</i>	
12/05/72-08/01/74	FY75:	TOTAL: \$73,405
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Huggett, R. W.	GSFC/Browning, R. K.	11-Astronomy
	GSFC/Janniche, P. A.	

(51-850 832-12-00)

NAS 8-30380 Louisiana State University - Baton Rouge 2164
Development of a three-dimensional time-dependent flow field model

<i>Period</i>	<i>Obligations</i>	
01/14/74-03/08/76	FY75: \$25,000	TOTAL: \$50,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Farmer, R. C.	MSFC/Hamby, H. G.	13-Physics
Waldrop, W. R.	MSFC/Wilson, H. B.	

(62-680 177-54-71)

NAS 8-30620 Louisiana State University - Baton Rouge 2165
Investigation of land-use spectral signatures

<i>Period</i>	<i>Obligations</i>	
03/25/74-03/24/75	FY75:	TOTAL: \$9,419
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Maples, D.	MSFC/Paludan, C. T.	39-Env Sci, NEC
	MSFC/Espy, P. N.	

(62-680 177-52-71)

NGL 19-001-097 Louisiana State University - Baton Rouge 2166
Interdisciplinary program in earth resource and environmental research

<i>Period</i>	<i>Obligations</i>	
05/17/71-08/01/74	FY75:	TOTAL: \$50,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Whitehurst, C. A.	HQ-P/Redding, E. R.	39-Env Sci, NEC
	MSFC/Kent, M. I.	

(10-371 340-00-00)

NGL 19-001-105 Louisiana State University - Baton Rouge 2167
Interpretation of remote sensing data in the Bayou la Fourche region of South Louisiana

<i>Period</i>	<i>Obligations</i>	
04/06/72-05/31/78	FY75: \$75,000	TOTAL: \$350,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Whitehurst, C. A.	HQ-P/Vitale, J. A.	39-Env Sci, NEC

(10-371 340-00-00)

NGR 19-001-012 Louisiana State University - Baton Rouge 2168
Cosmic ray investigations utilizing an emulsion chamber-calorimeter combination

<i>Period</i>	<i>Obligations</i>	
03/10/66-08/31/75	FY75: \$65,000	TOTAL: \$1,127,957
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Huggett, R. W.	HQ-SG/Opp, A. G.	11-Astronomy
	HQ-SG/Schmerling, E. R.	

(10-850 188-46-56) (10-850 188-46-52)

NAS 9-9317 Louisiana State University - Shreveport 2169
Study of modulatory effects of solar wind in galactic cosmic rays

<i>Period</i>	<i>Obligations</i>	
04/07/69-06/30/76	FY75:	TOTAL: \$30,160
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Moss, T. A.	JSC/Giuli, R. T.	11-Astronomy

(72-850 188-41-64) (72-850 188-41-51) (72-980 975-84-00)

NGR 19-005-003 Southern University A&M Col - Baton Rouge 2170

Experimental and theoretical study on nonequilibrium and unsteady phenomena in supersonic gas dynamics

<i>Period</i>	<i>Obligations</i>	
01/20/71-06/30/76	FY75:	TOTAL: \$75,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Liu, K. H.	MSFC/Kent, M. I.	19-Phys Sci, NEC
Butler, J. L.		

(62-950 951-15-00) (62-910 933-50-00) (10-371 340-00-00)

NGR 19-005-006 Southern University A&M Col - Baton Rouge 2171

Research in the many-particle theory of nuclear systems with application to neutron star matter

<i>Period</i>	<i>Obligations</i>	
10/17/72-11/30/75	FY75: \$19,633	TOTAL: \$54,803
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chakkalal, D. A.	JPL/Estabrook, F. B.	11-Astronomy
Yang, C. H.		

(56-371 340-00-00) (10-371 340-00-00)

NGT 19-005-750 Southern University A&M Col - Baton Rouge 2172

Training of predoctoral graduate students in space-related sciences and engineering

<i>Period</i>	<i>Obligations</i>	
06/01/75-07/31/76	FY75: \$14,000	TOTAL: \$14,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Burrell, M. Q.	HQ-P/Pohly, J. G.	49-Engr, NEC

(10-030 010-00-00)

NSG 2041 Southern University A&M Col - Baton Rouge 2173

Analytical model for the dynamic stress and deformation studies in the left ventricle

<i>Period</i>	<i>Obligations</i>	
08/19/74-11/30/75	FY75: \$23,744	TOTAL: \$23,744
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ray, G.	ARC/Sandler, H.	59-Life Sci, NEC

(21-371 340-00-00)

NSG 8016 Southern University A&M Col - Baton Rouge 2174

Radiative property investigation

<i>Period</i>	<i>Obligations</i>	
06/25/74-06/25/75	FY75:	TOTAL: \$18,700
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Scott, R. L.	MSFC/Unavailable	13-Physics

(62-371 340-00-00)

NSG 8025 Southern University A&M Col - Baton Rouge 2175

Inhibitor analysis for a solar heating and cooling system

<i>Period</i>	<i>Obligations</i>	
01/02/75-01/02/76	FY75: \$23,090	TOTAL: \$23,090
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tabony, J.	MSFC/Williamson, J. G.	46-Mech Engr
	MSFC/Kent, M. I.	

(62-371 340-00-00)

**NASA'S UNIVERSITY PROGRAM
LOUISIANA (Continued)**

NSG 9001 Southern University A&M Col - Baton Rouge 2176

Ice build-up on cryogenic tanks

<i>Period</i>	<i>Obligations</i>	
06/01/74-11/01/75	FY75: TOTAL: \$19,356	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chehl, S. S.	JSC/Curry, D. M.	19-Phys Sci, NEC
(72-371 340-00-00)		

NSG 9030 Southern University A&M Col - Baton Rouge 2177

State vector update filter for autoland portion of the shuttle landing

<i>Period</i>	<i>Obligations</i>	
09/01/75-08/31/76	FY75: \$22,100 TOTAL: \$22,100	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Grewal, G. S.	JSC/Echelkamp, R. E.	45-Elec Engr
(72-371 340-00-00)		

NGR 19-014-001 Southern University A&M Col - New Orleans 2178

Evaluation of secondary data as a guide to the systematic transportation analysis and research project of New Orleans

<i>Period</i>	<i>Obligations</i>	
05/16/72-12/31/74	FY75: TOTAL: \$5,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lucas, E. C.	HQ-P/Pohly, J. G.	39-Env Sci, NEC
(10-371 340-00-00)		

NAS 9-14501 Tulane University 2179

Marsh vegetation study

<i>Period</i>	<i>Obligations</i>	
02/01/75-01/31/76	FY75: \$30,500 TOTAL: \$30,500	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Thein, L. B.	NSTL/Thomann, G. C.	32-Geological Sci
Smalley, A. E.		
(72-680 177-55-81)		

NCA 2-00402 Tulane University 2180

Localization and histochemical characterization of the central emetic apparatus motion sickness

<i>Period</i>	<i>Obligations</i>	
01/01/74-12/31/74	FY75: \$2,000 TOTAL: \$2,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Brizzee, K. R.	ARC/Zill, L. P.	51-Biology
(21-970 970-21-11)		

NCA 2-00501 Tulane University 2181

Studies on localization and histochemical characterization of central emetic apparatus related to motion sickness

<i>Period</i>	<i>Obligations</i>	
01/01/75-12/31/75	FY75: \$9,992 TOTAL: \$9,992	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Brizzee, K. R.	ARC/Zill, L. P.	53-Other Medical
(21-970 970-21-11)		

NGL 19-002-027 Tulane University 2182

Electronic transport properties of molecular crystals

<i>Period</i>	<i>Obligations</i>	
02/17/69-01/31/76	FY75: TOTAL: \$122,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hermann, A. M.	HQ-RW/Weinberg, I.	13-Physics
	JPL/Rembaum, A.	
(10-704 502-01-02)		

NGR 19-002-030 Tulane University 2183

Determination of the intensity of turbulence in liquid rocket combustion chamber

<i>Period</i>	<i>Obligations</i>	
12/31/69-12/31/75	FY75: \$20,000 TOTAL: \$142,227	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
O'Hara, J. C.	LERC/Priem, R. J.	41-Aero Engr
(22-704 506-21-53)	(22-704 502-04-25)	

NGR 19-002-038 Tulane University 2184

Geologic mapping of a quadrangle on Mars based on Mariner 9 photographs

<i>Period</i>	<i>Obligations</i>	
02/04/72-06/30/75	FY75: \$6,992 TOTAL: \$21,992	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Meyer, J. D.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Holt, H. E.	
(10-840 384-50-80)	(10-840 384-00-00)	

NAS 8-28955 University of New Orleans 2185

Application of Saturn/Apollo automated data system capabilities to problems of the environmental impacts of urban transportation

<i>Period</i>	<i>Obligations</i>	
06/06/72-11/30/73	FY75: TOTAL: \$4,850	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Saussy, G. A.	MSFC/McDonough, G. F.	39-Env Sci, NEC

Hammond, J.
(62-950 951-15-00) (62-910 933-50-00)

NAS 9-12941 University of New Orleans 2186

Analysis of chemical components from tissue samples

<i>Period</i>	<i>Obligations</i>	
06/29/72-07/31/75	FY75: TOTAL: \$135,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Laseter, J. L.	JSC/Rummel, J. A.	51-Biology
(72-970 970-51-45)	(72-960 961-51-00)	

NSG 3049 University of Southwestern Louisiana 2187

Population inversion in charge exchange collisions

<i>Period</i>	<i>Obligations</i>	
03/01/75-02/28/76	FY75: \$5,082 TOTAL: \$5,082	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Matese, J. J.	LERC/Chubb, D. L.	13-Physics
	LERC/Michels, C. J.	
(22-704 506-25-11)		

NGR 19-007-002 Xavier University - Louisiana 2188

Systematic analysis research project

<i>Period</i>	<i>Obligations</i>	
05/22/72-02/15/75	FY75: TOTAL: \$25,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fulwiler, J. H.	HQ-P/Pohly, J. G.	76-Sociology
(10-371 340-00-00)		

NASA'S UNIVERSITY PROGRAM
LOUISIANA (Continued)

NGR 19-007-004 **Xavier University - Louisiana** **2189**
The correlation of the 24 hour pattern of rat plasma and adrenal corticosterone with the diurnal variations of certain tissue constituents involved in carbohydrate metabolism

<i>Period</i>	<i>Obligations</i>	
05/07/73-06/30/76	FY75: \$30,000	TOTAL: \$104,438
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ashman, P. U.	ARC/Winget, C. M.	51-Biology
	ARC/Danellis, J. V.	
(21-371 340-00-00)	(10-371 340-00-00)	

NSG 5009 **Bowie State College** **2195**
Characterization of the physico-chemical properties of polymeric materials for aerospace flights

<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/76	FY75: \$22,310	TOTAL: \$37,083
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rock, M.	GSFC/Gross, F. C.	12-Chemistry
Simms, B. R.	GSFC/Colony, J. A.	
(51-371 340-00-00)		

MARYLAND

NGR 21-027-001 **Bowie State College** **2190**
Research in cosmic ray physics

<i>Period</i>	<i>Obligations</i>	
09/01/69-02/29/76	FY75: \$9,926	TOTAL: \$84,861
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tornabene, H. S.	GSFC/Boldt, E. A.	11-Astronomy
	GSFC/McDonald, F. B.	
(51-371 340-00-00)	(51-850 188-41-59)	

NSG 1096 **Chesapeake College** **2196**
Investigation of the radiation induced by a laser beam incident on sea water

<i>Period</i>	<i>Obligations</i>	
09/01/74-08/31/75	FY75: \$24,688	TOTAL: \$24,688
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Paul, F. W.	LARC/Exton, R. J.	33-Oceanography
(23-704 506-18-12)		

NGR 21-027-004 **Bowie State College** **2191**
Research in numerical integration

<i>Period</i>	<i>Obligations</i>	
05/25/71-04/30/76	FY75: \$12,514	TOTAL: \$47,371
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Srivastava, S.	GSFC/Velez, C. E.	21-Mathematics
(51-371 340-00-00)	(10-371 340-00-00)	

NGR 21-122-001 **Coppin State College** **2197**
Computer graphics system for the display of pulse height analysis data

<i>Period</i>	<i>Obligations</i>	
12/01/73-08/31/75	FY75:	TOTAL: \$11,958
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sommerfeldt, D. E.	GSFC/Muckel, G. A.	21-Mathematics
(51-371 340-00-00)		

NGR 21-027-010 **Bowie State College** **2192**
Holographic gratings for spectrographic applications study of aberrations

<i>Period</i>	<i>Obligations</i>	
05/14/73-06/30/76	FY75: \$15,694	TOTAL: \$45,079
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bhatia, M. S.	GSFC/Caruso, A. J.	13-Physics
	GSFC/Osantowski, J. F.	
(51-371 340-00-00)	(10-371 340-00-00)	

NSG 5051 **Coppin State College** **2198**
Research on the failure mechanism and other factors leading to reduction of cycle life in aerospace nickel-cadmium cells

<i>Period</i>	<i>Obligations</i>	
05/01/75-04/30/76	FY75: \$12,843	TOTAL: \$12,843
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McDermott, P. P.	GSFC/Ford, F. E.	12-Chemistry
	GSFC/Halpert, G.	
(51-371 340-00-00)		

NGT 21-027-009 **Bowie State College** **2193**
A summer 1973 institute in computer applications

<i>Period</i>	<i>Obligations</i>	
04/09/73-01/31/74	FY75:	TOTAL: \$33,040
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Scurry, P. J.	HQ-P/Pohly, J. G.	21-Mathematics
	GSFC/Mundy, J. R.	
(10-371 340-00-00)		

NSG 5052 **Coppin State College** **2199**
Research on the penalty method as an effective technique for solving constrained minimization problems

<i>Period</i>	<i>Obligations</i>	
05/01/75-04/30/76	FY75: \$9,335	TOTAL: \$9,335
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Pinsky, S. S.	GSFC/Rosenzweig, M. B.	21-Mathematics
(51-030 051-02-00)		

NGT 21-027-012 **Bowie State College** **2194**
Undergraduate research participation program for 16 students

<i>Period</i>	<i>Obligations</i>	
06/01/74-04/30/76	FY75: \$31,131	TOTAL: \$56,825
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kirksey, C. H.	HQ-P/Pohly, J. G.	21-Mathematics
	GSFC/Mundy, J. R.	
(10-371 340-00-00)		

NGT 21-123-001 **Goucher College** **2200**
Training of two under-graduate students in the space-related sciences and engineering

<i>Period</i>	<i>Obligations</i>	
06/01/74-05/31/76	FY75: \$7,000	TOTAL: \$14,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Billet, J.	HQ-P/Pohly, J. G.	99-Multi-Discip
	HQ-P/Jenkins, H. G.	
(10-030 010-00-00)		

**NASA'S UNIVERSITY PROGRAM
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NAS 5-11415 Johns Hopkins University 2201
Atmosphere Explorer photoelectron and energetic particle experiment

<i>Period</i>	<i>Obligations</i>	
08/15/74-11/15/77	FY75: \$120,000	TOTAL: \$830,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Doering, D. M.	GSFC/Findlay, J. A.	31-Atmos Sci
(51-850 852-22-00)		

NAS 5-22071 Johns Hopkins University 2202
Environmental and toxicological evaluation of plasticizer migration

<i>Period</i>	<i>Obligations</i>	
06/20/72-06/01/74	FY75:	TOTAL: \$20,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rubin, R. J.	GSFC/Gross, F. C.	53-Other Medical
(51-250 141-00-00)	GSFC/Friedman, D. S.	

NAS 5-23316 Johns Hopkins University 2203
Design study of ultraviolet properties for large space telescope

<i>Period</i>	<i>Obligations</i>	
09/24/73-02/01/76	FY75: \$35,000	TOTAL: \$79,607
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rochelle, R. W.	GSFC/Boggess, A., III	11-Astronomy
Kerr, D. E.	GSFC/Levin, G. M.	
(51-850 868-12-00)	(51-850 893-78-56)	

NAS 8-31413 Johns Hopkins University 2204
Feasibility of multiple detector focal plane array UV spectrometer for the AMPS laboratory

<i>Period</i>	<i>Obligations</i>	
03/31/75-09/30/75	FY75: \$10,000	TOTAL: \$10,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Feldman, P. D.	MSFC/Roberts, W. T.	31-Atmos Sci
Moos, H. W.	MSFC/Chappell, C. R.	
(62-850 356-36-03)		

NAS 9-11528 Johns Hopkins University 2205
Apollo far UV spectrometer

<i>Period</i>	<i>Obligations</i>	
02/11/71-06/30/74	FY75:	TOTAL: \$4,194,324
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fastie, W. G.	JSC/Hardee, S. N.	13-Physics
(72-910 914-49-00)		

NGR 21-001-001 Johns Hopkins University 2206
Rocket and laboratory experiments and analysis on ultraviolet spectra of upper atmosphere

<i>Period</i>	<i>Obligations</i>	
08/01/61-08/31/75	FY75: \$240,000	TOTAL: \$3,601,963
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fastie, W. G.	HQ-SG/Roman, N. G.	11-Astronomy
Henry, R. C.	HQ-SG/Dubin, M.	
Doering, J. P.		
(10-850 879-11-00)		

NGR 21-001-111 Johns Hopkins University 2207
Small group performance & effects of contingency management in a programmed environment

<i>Period</i>	<i>Obligations</i>	
03/31/72-10/15/75	FY75: \$135,000	TOTAL: \$540,255
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Brady, J. V.	ARC/Patton, R. M.	62-Social Aspects
(21-970 970-21-51)	(21-970 970-21-00)	

NGR 21-001-115 Johns Hopkins University 2208
Investigation of high resolution spectrometer for large space telescope

<i>Period</i>	<i>Obligations</i>	
07/01/75-02/26/76	FY75: \$3,400	TOTAL: \$10,467
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fastie, W. G.	GSFC/Sobieski, S.	11-Astronomy
(51-850 893-78-56)	GSFC/Meece, K. J.	
	(51-850 188-78-58)	

NGR 21-001-119 Johns Hopkins University 2209
Feasibility study for a charge composition Explorer satellite light ion release experiment

<i>Period</i>	<i>Obligations</i>	
04/26/73-04/30/74	FY75:	TOTAL: \$50,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Krimigis, S. M.	HQ-SG/Kavanagh, L. D., Jr.	32-Geological Sci
(10-850 188-36-55)		

NGR 21-001-120 Johns Hopkins University 2210
Far ultraviolet observation of cool stars with the Copernicus satellite

<i>Period</i>	<i>Obligations</i>	
12/01/73-11/30/74	FY75:	TOTAL: \$12,124
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Moos, H. W.	GSFC/Kupperian, J. E.	11-Astronomy
(51-850 831-43-00)		

NSG 5029 Johns Hopkins University 2211
Search for X-rays from the central region of the cygnus loop nebula

<i>Period</i>	<i>Obligations</i>	
10/01/74-09/30/75	FY75: \$9,923	TOTAL: \$9,923
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Henry, R. C.	GSFC/Kupperian, J. E.	11-Astronomy
(51-850 831-42-00)		

NSG 5065 Johns Hopkins University 2212
Photometric measurements of cometary gas production rates

<i>Period</i>	<i>Obligations</i>	
05/01/75-10/31/75	FY75: \$10,500	TOTAL: \$10,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Feldman, P. D.	GSFC/Maran, S. P.	11-Astronomy
(51-840 196-41-52)	GSFC/Hobbs, R. W.	

NSG 5067 Johns Hopkins University 2213
Investigation of stellar chromospheres and the interstellar medium with the Copernicus satellite

<i>Period</i>	<i>Obligations</i>	
07/01/75-06/30/76	FY75: \$15,000	TOTAL: \$15,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Moos, H. W.	GSFC/Kupperian, J. E.	11-Astronomy
(51-850 831-42-00)		

NSG 7055 Johns Hopkins University 2214
Satellite data analysis

<i>Period</i>	<i>Obligations</i>	
01/01/74-04/24/76	FY75: \$25,000	TOTAL: \$60,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Krimigis, S. M.	HQ-SG/Berko, F. W.	13-Physics
(10-850 188-36-55)	HQ-SG/Schmerling, E. R.	

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NSG 9004	Johns Hopkins University	2215	Determination of the far-ultraviolet reflectivity of lunar dust samples
<i>Period</i>	<i>Obligations</i>		
07/01/74-06/30/75	FY75: TOTAL: \$16,500		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Henry, R. C.	JSC/Harris, J. W.	13-Physics	
Fastie, W. G.			
(72-810 388-10-03)			
NSR 21-001-077	Johns Hopkins University	2216	Collecting, cataloging, indexing and storing personal and professional papers of Dr Hugh Latimer Dryden
<i>Period</i>	<i>Obligations</i>		
12/21/70-07/31/73	FY75: TOTAL: \$71,783		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Berthel, J. H.	HQ-AD/Emme, E. M.	73-History	
(10-250 141-00-00)			
NGR 21-025-011	Morgan State College	2217	Evaluative research of audio modules
<i>Period</i>	<i>Obligations</i>		
01/01/74-01/31/75	FY75: TOTAL: \$26,686		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Collagan, R. B.	GSFC/Shorter, C. W.	99-Multi-Discip	
(51-371 340-00-00)			
NGT 21-025-006	Morgan State College	2218	Summer faculty fellowship program
<i>Period</i>	<i>Obligations</i>		
04/16/71-03/31/76	FY75: \$36,465 TOTAL: \$170,781		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Proctor, N. K.	HQ-P/Pohly, J. G.	19-Phys Sci, NEC	
(10-371 340-00-00)	GSFC/Mundy, J. R.		
	(51-030 051-02-00)		
NGR 21-002-010	University of Maryland - Baltimore	2219	Theoretical & experimental research on gravitational radiation
<i>Period</i>	<i>Obligations</i>		
06/12/63-04/31/75	FY75: TOTAL: \$939,223		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Misner, C. W.	HQ-SG/Roman, N. G.	11-Astronomy	
(10-850 188-41-54)	HQ-SG/Rosendhal, J. D.		
	(10-840 185-00-00)		
NAS 5-11063	University of Maryland - College Park	2220	Experiment to analyze ions and electrons for IMP-H & J
<i>Period</i>	<i>Obligations</i>		
06/11/68-06/30/76	FY75: \$200,000 TOTAL: \$1,661,392		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Gloeckler, G.	GSFC/Davis, M. A.	13-Physics	
(51-850 861-42-00)			
NAS 5-20062	University of Maryland - College Park	2221	Low energy charged particles experiment for International Sun-Earth Explorer mother and heliocentric spacecraft
<i>Period</i>	<i>Obligations</i>		
05/02/74-07/30/80	FY75: \$280,671 TOTAL: \$290,671		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Gloeckler, G.	GSFC/Davis, M. A.	13-Physics	
Fon, C. Y.			
Fisk, L. A.			
(51-850 862-12-00)	(51-850 861-62-00)		
NAS 5-20834	University of Maryland - College Park	2222	Investigation of the origin of organic molecules in the atmosphere of Jupiter
<i>Period</i>	<i>Obligations</i>		
01/09/75-10/09/75	FY75: \$9,000 TOTAL: \$9,000		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Ponnamperuma, C. A.	GSFC/Stief, L. J.	12-Chemistry	
(51-850 188-45-51)			
NAS 5-20872	University of Maryland - College Park	2223	Colloquium on chemical evolution of the giant planets
<i>Period</i>	<i>Obligations</i>		
10/21/74-10/21/75	FY75: \$6,000 TOTAL: \$6,000		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Ponnamperuma, C. A.	GSFC/Conrath, B. J.	12-Chemistry	
(51-840 384-47-51)			
NAS 5-23237	University of Maryland - College Park	2224	Feasibility study for infrared interferometer, spectrometer, & radiometer for Mariner/Jupiter 1977 launch
<i>Period</i>	<i>Obligations</i>		
05/09/73-06/30/77	FY75: \$10,000 TOTAL: \$22,900		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Ponnamperuma, C. A.	GSFC/Conrath, B. J.	13-Physics	
(51-840 802-31-00)	GSFC/Hanel, R. A.		
	(51-840 802-00-00)		
NAS 9-5886	University of Maryland - College Park	2225	Lunar gravimeter experiment for ALSEP
<i>Period</i>	<i>Obligations</i>		
04/26/66-12/31/74	FY75: \$62,580 TOTAL: \$2,266,168		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Weber, J.	JSC/Eichelman, W. F.	19-Phys Sci, NEC	
(72-810 383-31-00)	(72-810 383-25-03)		
NCA 2-20403	University of Maryland - College Park	2226	Intermolecular recognition between nucleotides and amino acids
<i>Period</i>	<i>Obligations</i>		
06/01/74-11/30/75	FY75: \$2,000 TOTAL: \$2,000		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Ponnamperuma, C.	ARC/Zill, L. P.	12-Chemistry	
(21-840 192-55-64)			
NCA 2-20501	University of Maryland - College Park	2227	Joint meeting on the chemical evolution of giant planets
<i>Period</i>	<i>Obligations</i>		
08/01/74-12/31/74	FY75: \$7,000 TOTAL: \$7,000		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Ponnamperuma, C.	ARC/Zill, L. P.	11-Astronomy	
(21-840 192-55-64)			
NCA 5-1	University of Maryland - College Park	2228	Study of digital image processing of astronomical scenes
<i>Period</i>	<i>Obligations</i>		
09/03/74-05/15/75	FY75: \$8,000 TOTAL: \$8,000		
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Rosenfeld, A.	GSFC/Fischel, D.	11-Astronomy	
(51-850 868-13-00)	GSFC/Klingsmith, D. A.		

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NCA 5-5 University of Maryland - College Park 2229
Resolution enhancement of the IUE breadboard Echelle spectra
Period *Obligations*
05/16/75-09/02/75 FY75: \$4,320 TOTAL: \$4,320
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Rosenfeld, A. GSFC/Klinglesmith, D. A.11-Astronomy
(51-850 868-13-00)

NCA 5-6 University of Maryland - College Park 2230
Analysis of a satellite X-ray detector
Period *Obligations*
06/01/75-08/23/75 FY75: \$6,000 TOTAL: \$6,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Rose, W. GSFC/Dennis, B. R. 19-Phys Sci, NEC
(51-850 821-32-00)

NCA 5-7 University of Maryland - College Park 2231
Determining the observing program and interpreting the lifetime data of a satellite X-ray detector
Period *Obligations*
06/01/75-08/23/75 FY75: \$2,500 TOTAL: \$2,500
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Westerhaut, G. GSFC/Crannel, C. J. 19-Phys Sci, NEC
(51-850 821-32-00)

NGL 21-002-005 University of Maryland - College Park 2232
Theoretical research on dynamics of astrophysical plasmas including studies of structure of plasma shock waves in solar corona and their possible radio emission
Period *Obligations*
02/01/62-06/30/78 FY75: \$65,547 TOTAL: \$790,493
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wu, C. S. HQ-SG/Cauffman, D. P. 19-Phys Sci, NEC
HQ-SG/Schmerling, E. R.
(10-850 188-36-55)

NGL 21-002-033 University of Maryland - College Park 2233
Theoretical and experimental studies in space sciences, including consideration of rocket probe and satellites techniques
Period *Obligations*
06/02/64-05/31/78 FY75: \$217,676 TOTAL: \$2,602,213
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Laster, H. E. GSFC/Abid, G. E. 31-Atmos Sci
Smith, E. P. GSFC/Pieper, G. F.
(51-850 188-38-53) (51-850 385-38-00) (51-850 405-03-01)

NGL 21-002-367 University of Maryland - College Park 2234
Multifrequency mapping of the radio sun
Period *Obligations*
10/01/72-06/31/75 FY75: TOTAL: \$202,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kundu, M. R. GSFC/Fainberg, J. 11-Astronomy
Erickson, W. C.
(51-850 188-00-00)

NGR 21-002-002 University of Maryland - College Park 2235
Theoretical studies in atmospheric and space physics
Period *Obligations*
02/01/60-12/31/74 FY75: TOTAL: \$662,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Opik, E. J. HQ-SG/Dubin, M. 11-Astronomy
Laster, H. E. HQ-SL/Brunk, W. E.
(10-850 188-45-51)

NGR 21-002-007 University of Maryland - College Park 2236
Research on measurement of atomic transition probabilities of high temperature cases
Period *Obligations*
03/20/63-10/31/75 FY75: \$10,000 TOTAL: \$318,024
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wilkerson, T. D. HQ-SG/Jordan, S. D. 11-Astronomy
Miller, M. H.
(10-850 188-38-53)

NGR 21-002-066 University of Maryland - College Park 2237
A study of primary cosmic ray electrons, utilizing balloon-borne experiments
Period *Obligations*
11/19/65-03/31/76 FY75: TOTAL: \$705,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Earl, J. A. HQ-SG/Lazarus, A. J. 11-Astronomy
O'Gallagher, J. J. HQ-SG/Opp, A. G.
(10-850 188-46-56) (10-850 188-46-51)

NGR 21-002-073 University of Maryland - College Park 2238
Experimental and theoretical investigation of plasma radiation
Period *Obligations*
04/26/66-08/31/75 FY75: \$25,000 TOTAL: \$622,005
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Griem, H. R. HQ-SG/Roman, N. G. 11-Astronomy
HQ-SG/Rosendhal, J. D.
(10-850 188-41-51) (10-850 188-00-00)

NGR 21-002-096 University of Maryland - College Park 2239
Research in atmospheric physics
Period *Obligations*
06/21/66-12/31/75 FY75: \$64,000 TOTAL: \$546,414
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Matthews, D. L. GSFC/Brace, L. H. 31-Atmos Sci
GSFC/Gagnon, B. D.
(51-840 185-47-51) (51-840 185-47-52) (51-840 384-47-51)

NGR 21-002-199 University of Maryland - College Park 2240
Research in solar radio astronomy at short wavelengths
Period *Obligations*
04/11/69-09/31/75 FY75: \$49,500 TOTAL: \$163,656
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kundu, M. R. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SG/Timothy, A. F.
(10-840 196-41-82) (10-850 188-38-52)

NGR 21-002-224 University of Maryland - College Park 2241
Research on the measurement of the charge and isotopic composition on the primary cosmic rays
Period *Obligations*
07/31/69-02/29/76 FY75: \$17,500 TOTAL: \$170,500
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gloeckler, G. HQ-SG/Lazarus, A. J. 11-Astronomy
HQ-SG/Opp, A. G.
(10-850 188-46-56) (10-850 188-46-51)

NGR 21-002-267 University of Maryland - College Park 2242
Supervision of the laser ranging at McDonald Observatory
Period *Obligations*
04/03/70-03/31/74 FY75: TOTAL: \$534,847
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Currie, D. G. HQ-SM/Strickland, A. T. 13-Physics
(10-810 195-43-50)

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NGR 21-002-270 University of Maryland - College Park 2243
 Research in mechanical theorem proving

<i>Period</i>	<i>Obligations</i>	
05/18/70-09/30/75	FY75: \$24,966	TOTAL: \$88,405
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Minker, J.	HQ-RE/Pontious, C. E.	21-Mathematics
	JPL/Whitney, W. M.	
(10-704 502-03-32)	(10-740 129-00-00)	(21-740 129-00-00)

NGR 21-002-285 University of Maryland - College Park 2244
 Laser techniques and single photo-electron detection & timing for satellite ranging

<i>Period</i>	<i>Obligations</i>	
11/02/70-09/30/73	FY75: \$346,142	TOTAL: \$346,142
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Alley, C. O.	HQ-MT/Redfield, M.	13-Physics
	HQ-MT/Markey, M. F.	
(10-980 909-94-24)		

NGR 21-002-291 University of Maryland - College Park 2245
 Studies of charged particles in natural and laboratory environments

<i>Period</i>	<i>Obligations</i>	
01/28/71-09/30/75	FY75: \$26,124	TOTAL: \$125,119
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Coplan, M. A.	GSFC/Ogilvie, K. W.	13-Physics
Rosenberg, T. J.	GSFC/Hoffman, R. A.	
(51-850 188-36-55)	(51-850 385-36-00)	

NGR 21-002-296 University of Maryland - College Park 2246
 Studies of shock wave propagation on the lunar surface

<i>Period</i>	<i>Obligations</i>	
05/05/71-05/31/74	FY75: \$53,000	TOTAL: \$53,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Pai, S. I.	GSFC/Mentzer, R. H.	31-Atmos Sci
Greenberg, J. S.		
Hazlrigg, G. A.		
(10-810 195-00-00)		

NGR 21-002-301 University of Maryland - College Park 2247
 An interferometer to measure binary separations and determination of stellar masses in spectroscopic binaries

<i>Period</i>	<i>Obligations</i>	
03/10/71-10/31/74	FY75: \$67,866	TOTAL: \$67,866
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Currie, D. G.	HQ-SG/Boggess, N. W.	11-Astronomy
(10-850 188-41-51)		

NGR 21-002-303 University of Maryland - College Park 2248
 Experimental studies of three dimensional turbulent boundary layers

<i>Period</i>	<i>Obligations</i>	
04/22/71-08/31/73	FY75: \$25,000	TOTAL: \$25,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Melnik, W. L.	HQ-RA/Gessow, A.	13-Physics
(10-740 129-00-00)		

NGR 21-002-316 University of Maryland - College Park 2249
 Research program in charged particle detector technology

<i>Period</i>	<i>Obligations</i>	
07/01/71-07/31/76	FY75: \$247,000	TOTAL: \$797,717
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gloekler, G.	GSFC/Teegarden, B. J.	13-Physics
O'Gallagher, J. J.		
(51-840 811-22-00)	(51-850 188-41-59)	(51-850 188-46-56)

NGR 21-002-317 University of Maryland - College Park 2250
 Chemical studies of the origin of life

<i>Period</i>	<i>Obligations</i>	
08/18/71-06/30/76	FY75: \$120,000	TOTAL: \$392,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ponnampuruma, C. A.	HQ-SL/Young, R. S.	12-Chemistry
(10-840 192-55-61)		

NGR 21-002-344 University of Maryland - College Park 2251
 Studies on thermophysical properties in critical region of fluids

<i>Period</i>	<i>Obligations</i>	
02/16/72-08/31/75	FY75: \$3,164	TOTAL: \$42,999
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sengers, J. V.	LERC/Simoneau, R. J.	13-Physics
(22-704 502-28-04)	(22-704 506-21-54)	

NGR 21-002-345 University of Maryland - College Park 2252
 CO2 laser cold cathode research

<i>Period</i>	<i>Obligations</i>	
01/01/72-11/30/73	FY75: \$58,029	TOTAL: \$58,029
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hochuli, U. E.	GSFC/Hurt, C. R.	45-Elec Engr
	GSFC/McAvoy, N.	
(51-620 164-21-80)		

NGR 21-002-350 University of Maryland - College Park 2253
 Optimum design of composite materials in response to aerodynamic noise & noise transmission

<i>Period</i>	<i>Obligations</i>	
03/07/72-05/31/75	FY75: \$39,880	TOTAL: \$39,880
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Yang, J. C.	ARC/Chyu, W. J.	41-Aero Engr
(21-704 502-22-11)		

NGR 21-002-351 University of Maryland - College Park 2254
 Techniques for processing of remotely sensed imagery

<i>Period</i>	<i>Obligations</i>	
04/01/72-06/30/74	FY75: \$108,488	TOTAL: \$108,488
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rosenfeld, A.	GSFC/Alford, W. A.	49-Engr, NEC
(51-680 160-20-59)		

NGR 21-002-368 University of Maryland - College Park 2255
 Geochemistry of lunar & meteoritic materials

<i>Period</i>	<i>Obligations</i>	
06/01/72-03/31/76	FY75: \$105,486	TOTAL: \$248,317
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Weidner, J. R.	GSFC/Philpotts, J. A.	32-Geological Sci
(51-810 195-22-03)	(51-810 383-22-04)	(51-810 388-10-01)

NGR 21-002-378 University of Maryland - College Park 2256
 Wind velocities from satellite pictures

<i>Period</i>	<i>Obligations</i>	
10/16/72-12/31/74	FY75: \$99,983	TOTAL: \$99,983
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rosenfeld, A.	GSFC/Arking, A.	31-Atmos Sci
Lo, R. C.		
(51-680 611-13-00)		

NASA'S UNIVERSITY PROGRAM
MARYLAND (Continued)

NGR 21-002-386 University of Maryland - College Park 2257
 Rocket investigation of Relativistic Electron Precipitation (REP) events

<i>Period</i>	<i>Obligations</i>	
04/13/73-06/30/74	FY75: TOTAL: \$20,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Matthews, D. L.	HQ-SG/Kavanagh, L. D., Jr.	11-Astronomy

(10-850 385-00-00)

NGR 21-002-390 University of Maryland - College Park 2258
 Geophysical causes and measurement accuracies related to earth rotation

<i>Period</i>	<i>Obligations</i>	
12/11/72-09/10/75	FY75: TOTAL: \$13,104	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Currie, D. G.	GSFC/Smith, D. E.	19-Phys Sci, NEC

(51-630 161-79-51)

NGR 21-002-399 University of Maryland - College Park 2259
 Urbanization and geologic processes in the Chesapeake Bay watershed

<i>Period</i>	<i>Obligations</i>	
03/01/73-10/31/75	FY75: \$19,703 TOTAL: \$43,175	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Weidner, J. R.	GSFC/Rango, A.	32-Geological Sci
	GSFC/Salomonsen, V. V.	

(51-680 177-52-41) (51-680 177-54-41)

NGR 21-002-400 University of Maryland - College Park 2260
 Preliminary experiments with a split sphere high pressure apparatus

<i>Period</i>	<i>Obligations</i>	
04/17/73-10/31/75	FY75: \$49,999 TOTAL: \$110,641	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Spain, I. L.	LERC/Coles, W. D.	13-Physics
Williams, E.	LERC/Brown, G. V.	

Paauwe, J.
 (22-704 502-04-35)

NGR 21-002-408 University of Maryland - College Park 2261
 Investigations into nuclear plasmas and radiant energy systems

<i>Period</i>	<i>Obligations</i>	
06/30/73-04/30/75	FY75: TOTAL: \$30,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tidman, D. A.	HQ-RR/Thom, K.	21-Mathematics

(10-704 503-10-03)

NGR 21-002-412 University of Maryland - College Park 2262
 Investigation of UTI corrections: pole motion and relativity effects

<i>Period</i>	<i>Obligations</i>	
10/01/73-07/31/74	FY75: TOTAL: \$10,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Richard, J. P.	GSFC/Rosenbaum, B.	13-Physics

(51-630 161-02-01) (51-630 369-02-01)

NGR 21-002-425 University of Maryland - College Park 2263
 Lecture series on life in the universe: Are we alone in the universe?

<i>Period</i>	<i>Obligations</i>	
08/01/73-07/31/74	FY75: TOTAL: \$18,600	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ponnamperuma, C. A.	HQ-SL/Young, R. S.	12-Chemistry

(10-840 192-55-61)

NGR 21-002-433 University of Maryland - College Park 2264
 Radar optimization for sea surface and geodetic measurements

<i>Period</i>	<i>Obligations</i>	
01/01/74-12/31/74	FY75: TOTAL: \$12,019	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harger, R. O.	GSFC/Marini, J. W.	33-Oceanography

(51-630 161-03-01)

NGR 21-002-435 University of Maryland - College Park 2265
 Short pulse lasers and single photo-electron detection and timing for satellite ranging

<i>Period</i>	<i>Obligations</i>	
10/01/73-09/30/74	FY75: TOTAL: \$75,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Alley, C. O.	WFC/Hoge, F. E.	13-Physics
Currie, D. G.	WFC/McGoogan, J. T.	

(53-630 161-05-02)

NGR 21-002-444 University of Maryland - College Park 2266
 A wide-band optical very long baseline amplitude interferometer for precise determination of the polar position

<i>Period</i>	<i>Obligations</i>	
04/01/74-03/31/76	FY75: \$41,128 TOTAL: \$71,128	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Currie, D. G.	GSFC/Buften, J. L.	13-Physics
	GSFC/Fitzmaurice, M. W.	

(51-630 161-05-02) (51-630 161-05-04) (51-704 506-20-33)

NGT 21-002-254 University of Maryland - College Park 2267
 Summer faculty fellowship program in research for 24 faculty members

<i>Period</i>	<i>Obligations</i>	
12/23/69-03/31/76	FY75: \$111,701 TOTAL: \$422,380	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Emad, F. P.	HQ-P/Carter, C. H.	49-Engr, NEC

(10-371 340-00-00) (10-370 181-00-00)

NSG 1031 University of Maryland - College Park 2268
 Kinetics investigation of several reactions involving chlorine-containing compounds

<i>Period</i>	<i>Obligations</i>	
05/01/74-04/30/76	FY75: \$49,982 TOTAL: \$100,509	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Guard, R. W.	LARC/Pellett, G. L.	12-Chemistry

(23-704 502-24-88)

NSG 1036 University of Maryland - College Park 2269
 Measurement of water vapor in the atmosphere

<i>Period</i>	<i>Obligations</i>	
05/01/74-04/30/75	FY75: TOTAL: \$48,900	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wilkerson, T. D.	LARC/Northam, G. B.	31-Atmos Sci
McIlrath, T. J.	LARC/Remsberg, E. E.	

Ellingson, R. G.
 (23-601 645-20-01)

NSG 1075 University of Maryland - College Park 2270
 Airborne in-situ atmospheric measurements of the OH free radical via a tunable ultraviolet dye laser

<i>Period</i>	<i>Obligations</i>	
07/01/74-12/31/75	FY75: \$9,000 TOTAL: \$39,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Davis, D. D.	LARC/Hoell, J. M.	39-Env Sci, NEC
Moriarity, A.	LARC/Wade, W. R.	

(23-680 176-91-31)

**NASA'S UNIVERSITY PROGRAM
MARYLAND (Continued)**

NSG 1156 University of Maryland - College Park 2271
Tunable lasers for water vapor measurements and other lidar applications

<i>Period</i>	<i>Obligations</i>	
03/15/75-11/02/75	FY75: \$25,000	TOTAL: \$25,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gammon, R. W.	LARC/Northam, G. B.	31-Atmos Sci
Wilkerson, T. D.	LARC/Browell, E. V.	
McIlrath, T. J.		

(23-601 645-20-01)

NSG 1193 University of Maryland - College Park 2272
Evaluation of alternative methods for maintenance and dissemination of engineering software

<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$26,415	TOTAL: \$26,415
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Schaeffer, H. G.	LARC/McComb, H. G., Jr.	41-Aero Engr

(23-704 506-17-21)

NSG 2079 University of Maryland - College Park 2273
Study of the experiment operator concept during the NASA/ESA CV 990 assess mission

<i>Period</i>	<i>Obligations</i>	
03/01/75-09/16/75	FY75: \$20,000	TOTAL: \$20,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dick, K. A.	ARC/Haughney, L. C.	31-Atmos Sci
Benesch, W.	ARC/Neel, C. B.	

(21-980 975-50-01)

NSG 3001 University of Maryland - College Park 2274
Mechanical properties and the electronic structure of transition metal alloys

<i>Period</i>	<i>Obligations</i>	
03/01/74-03/01/76	FY75: \$36,079	TOTAL: \$60,888
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Drew, H. D.	LERC/Stephens, J. R.	47-Materials Engr
Arsenault, R. J.		

(22-704 502-01-06)

NSG 5017 University of Maryland - College Park 2275
Resource identification studies on urban watersheds using the Anacostia River Basin as an example

<i>Period</i>	<i>Obligations</i>	
07/15/74-08/31/76	FY75: \$8,242	TOTAL: \$8,242
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ragan, R. M.	GSFC/Salomonsen, V. V.	32-Geological Sci
McCuen, R. H.	GSFC/Rango, A.	

(51-680 177-52-41)

NSG 5035 University of Maryland - College Park 2276
Astronomy and geophysics experiment using very long base interferometry

<i>Period</i>	<i>Obligations</i>	
12/01/74-11/30/76	FY75: \$10,000	TOTAL: \$10,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Richard, J. P.	GSFC/Clark, T. A.	11-Astronomy
	GSFC/Ryan, J. W.	

(51-630 653-00-00)

NSG 5042 University of Maryland - College Park 2277
Study of CO2 waveguide laser life problem

<i>Period</i>	<i>Obligations</i>	
01/12/75-12/31/75	FY75: \$30,022	TOTAL: \$30,022
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hochuli, U. E.	GSFC/Degnan, J. J.	49-Engr, NEC
	GSFC/McElroy, J. H.	

(51-704 506-20-33)

NSG 5047 University of Maryland - College Park 2278
Study of the geochemistry and dispersal of radionuclides and trace metals in Chesapeake Bay sediments

<i>Period</i>	<i>Obligations</i>	
02/01/75-12/31/75	FY75: \$8,509	TOTAL: \$8,509
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sommer, S. E.	GSFC/Cressy, P. J.	32-Geological Sci
Adler, I.	GSFC/Trombka, J. I.	

(51-680 176-52-41)

NSG 5048 University of Maryland - College Park 2279
Efficient detection, analysis and classification of lightning radiation fields

<i>Period</i>	<i>Obligations</i>	
02/01/75-01/31/76	FY75: \$18,969	TOTAL: \$18,969
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harger, R. O.	GSFC/Levine, D. M.	45-Elec Engr

(51-680 175-21-45)

NSG 5059 University of Maryland - College Park 2280
Line blocking measurements in the ultra-violet spectra of Sirius, Procyon and Canopus

<i>Period</i>	<i>Obligations</i>	
03/01/75-02/29/76	FY75: \$13,200	TOTAL: \$13,200
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bell, R. A.	GSFC/Kupperian, J. E.	11-Astronomy

(51-850 831-42-00)

NSG 5062 University of Maryland - College Park 2281
Research to achieve centimeter laser ranging accuracy to earth satellites for earth physics applications

<i>Period</i>	<i>Obligations</i>	
04/01/75-11/30/75	FY75: \$165,000	TOTAL: \$165,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Alley, C. O.	GSFC/Fitzmaurice, M. W.	99-Multi-Discip
Poultney, S. K.	GSFC/Johnson, T. S.	
Currie, D. G.		

(51-500 312-20-30)

NSG 6001 University of Maryland - College Park 2282
Resource and environmental management of the Chesapeake Bay region

<i>Period</i>	<i>Obligations</i>	
12/15/74-09/15/75	FY75: \$29,686	TOTAL: \$29,686
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harmon, D. M.	WFC/Alfonsi, P. J.	39-Env Sci, NEC
Fuller, K. B.		

(53-680 641-14-08)

NASA'S UNIVERSITY PROGRAM
MARYLAND (Continued)

NSG 7017 University of Maryland - College Park **2283**
 Magnetic remanence associated with the shock wave impact induced gamma alpha transformation in iron

<i>Period</i>	<i>Obligations</i>	
03/01/74-08/31/75	FY75: TOTAL: \$22,886	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wasilewski, P.	HQ-SM/Alexander, D. E.	32-Geological Sci
Weidner, J. R.		
(10-810 195-42-66)		

NSG 7046 University of Maryland - College Park **2284**
 Studies of the Apollo 15 and 16 orbital X-ray data

<i>Period</i>	<i>Obligations</i>	
05/01/74-04/30/76	FY75: \$25,000 TOTAL: \$58,961	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Adler, I.	HQ-SM/Kosofsky, L.J.	32-Geological Sci
	HQ-SM/Roberson, F. I.	
(10-810 383-20-04)		

NAS 6-2595 University of Maryland - Eastern Shore **2285**
 Library services

<i>Period</i>	<i>Obligations</i>	
09/30/74-09/30/75	FY75: \$55,019 TOTAL: \$55,019	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	WFC/Floyd, J. C.	99-Multi-Discip
	WFC/Denton, S. R.	
(53-030 053-04-00)		

NGR 21-119-001 University of Maryland - Eastern Shore **2286**
 Fabrication of semiconductor injection lasers with output to match specific atomic transitions

<i>Period</i>	<i>Obligations</i>	
10/12/72-12/31/75	FY75: \$22,964 TOTAL: \$48,563	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Singh, G.	GSFC/Fitzmaurice, M. W.	19-Phys Sci, NEC
(51-371 340-00-00)	(51-620 402-00-00)	

NGR 21-119-002 University of Maryland - Eastern Shore **2287**
 A computer technique to vector aircraft

<i>Period</i>	<i>Obligations</i>	
04/27/72-08/31/75	FY75: \$13,271 TOTAL: \$29,159	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nagarajon, N.	WFC/Raine, A. W.	41-Aero Engr
(10-371 340-00-00)		

NGR 21-119-003 University of Maryland - Eastern Shore **2288**
 High power pulsed laser beams and their atmospheric propagation limitations

<i>Period</i>	<i>Obligations</i>	
08/18/72-02/28/76	FY75: \$26,715 TOTAL: \$46,254	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Singh, G.	WFC/Kim, H. H.	13-Physics
	WFC/Oberholtzer, J. D.	
(53-371 340-00-00)	(10-371 340-00-00)	

MASSACHUSETTS

NGR 22-003-027 Boston College **2289**
 Analysis of 1967-1969 aircraft data

<i>Period</i>	<i>Obligations</i>	
07/15/72-06/30/75	FY75: TOTAL: \$30,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Eather, R. H.	ARC/Haughney, L. C.	31-Atmos Sci
(21-850 385-45-00)	(21-850 352-02-02)	

NGR 22-004-018 Boston University **2290**
 Ultrasonic measurement of heart volume

<i>Period</i>	<i>Obligations</i>	
03/01/70-12/31/75	FY75: TOTAL: \$65,511	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fulton, G. P.	HQ-MM/Larson, C.A.	59-Life Sci, NEC
Berman, H. J.		
(25-770 127-00-00)	(10-770 127-00-00)	

NGR 22-004-021 Boston University **2291**
 Studies on the patrogenesis and therapy of orthostatic hypotension

<i>Period</i>	<i>Obligations</i>	
06/19/70-01/31/76	FY75: \$40,000 TOTAL: \$324,198	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chobanion, A. V.	JSC/Hoffler, G. W.	52-Clinical Med
(72-970 970-51-12)	(72-970 970-00-00)	

NGR 22-004-024 Boston University **2292**
 Study of bird tracking by artificial satellite

<i>Period</i>	<i>Obligations</i>	
06/02/70-10/31/73	FY75: TOTAL: \$126,440	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
MacKay, R. S.	HQ-ER/Jacobs, G. J.	51-Biology
(10-680 160-75-29)		

NGR 22-004-025 Boston University **2293**
 Microbial contributions to the precambrian earth

<i>Period</i>	<i>Obligations</i>	
12/15/70-09/30/75	FY75: \$30,000 TOTAL: \$88,353	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Margulis, L.	HQ-SL/Young, R. S.	32-Geological Sci
(10-840 192-55-62)	(10-870 189-00-00)	

NGR 22-004-027 Boston University **2294**
 Dynamics of sinuous rill formation

<i>Period</i>	<i>Obligations</i>	
05/25/71-10/01/73	FY75: TOTAL: \$19,705	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Brewer, T.	HQ-SM/Bryson, R. P.	32-Geological Sci
Coldwell, D. W.	HQ-SM/Allenby, R. J.	
Gheith, M. A.		
(10-810 383-00-00)		

NGR 22-004-030 Boston University **2295**
 Compressible unsteady potential aerodynamic flow around lifting bodies having arbitrary shapes & motions

<i>Period</i>	<i>Obligations</i>	
12/08/71-12/31/75	FY75: \$52,744 TOTAL: \$193,108	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Morino, L.	LARC/Yates, E. C., Jr.	41-Aero Engr
(23-702 743-01-11)	(23-702 743-32-11)	(23-740 134-00-00)

**NASA'S UNIVERSITY PROGRAM
MASSACHUSETTS (Continued)**

NSG 5055	Boston University	2296	NAS 5-22374	Harvard University	2303
Investigation of the sharp-lined Tau Herculis star			Solar EUV-XUV soft X-ray telescope study		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/01/75-04/30/76	FY75: \$8,671	TOTAL: \$8,671	05/14/75-06/14/76	FY75: \$28,561	TOTAL: \$28,561
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Adelman, S. J.	GSFC/Kupperian, J. E.	11-Astronomy	Withbroe, G. L.	GSFC/White, A.	11-Astronomy
(51-850 831-42-00)			(51-850 356-38-01)		
NSG 7063	Boston University	2297	NAS 5-23199	Harvard University	2304
Programmed health testing in a working population			Atmosphere Explorer theoretical investigations		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/29/74-10/31/74	FY75:	TOTAL: \$6,683	03/19/73-08/19/77	FY75: \$15,000	TOTAL: \$75,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hershberg, P. I.	HQ-JG/Arnoldi, L. B.	52-Clinical Med	McElroy, M. B.	GSFC/Findlay, J. A.	31-Atmos Sci
(10-030 010-00-00)			(51-850 852-22-00)	(51-850 852-00-00)	
NSG 7098	Brandeis University	2298	NAS 8-31374	Harvard University	2305
Studies of solar atmospheric dynamics			Scientific data reduction and analysis activities ATM experiment S-054		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/01/75-09/31/75	FY75: \$10,000	TOTAL: \$10,000	01/01/75-06/30/76	FY75: \$218,964	TOTAL: \$218,964
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stein, R. F.	HQ-SG/Jordan, S. D.	11-Astronomy	Vaiana, G. S.	MSFC/Snoddy, W. C.	13-Physics
(10-850 188-38-53)	HQ-SG/Timothy, A. F.		(62-850 357-38-02)	MSFC/Fields, S. A.	(62-960 996-00-00)
NAS 1-10492	Harvard University	2299	NAS 9-13370	Harvard University	2306
Participation in science planning for Viking 1975 missions in area of entry science			Monitoring & control of nutritional intake & collection of metabolic excreta		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
03/25/71-03/31/77	FY75:	TOTAL: \$123,200	04/25/73-03/01/75	FY75:	TOTAL: \$38,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McElroy, M. B.	LARC/Soffen, G. A.	31-Atmos Sci	Hegsted, D. M.	JSC/Smith, M. C., Jr.	59-Life Sci, NEC
(23-840 815-20-00)			(72-960 948-60-90)		
NAS 5-3949	Harvard University	2300	NGL 22-007-006	Harvard University	2307
Study and experiment for a high resolution ultra violet telescope and spectrometer system			Theoretical & experimental studies on ultraviolet solar physics		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/28/65-06/30/76	FY75: \$2,065,881	TOTAL: \$36,850,607	07/10/63-12/31/75	FY75: \$250,000	TOTAL: \$3,966,398
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Goldberg, L.	MSFC/Unavailable	11-Astronomy	Parkinson, W. H.	HQ-SG/Jordan, S. D.	13-Physics
(62-850 357-38-03)	(62-960 996-00-00)		(10-850 188-38-53)	HQ-SG/Timothy, A. F.	(10-850 188-00-00)
NAS 5-20764	Harvard University	2301	NGL 22-007-069	Harvard University	2308
Ultraviolet investigations of stellar X-ray sources			Infrared absorption spectrophotometry of organic extractives from precambrian sediments		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/06/75-01/06/76	FY75: \$8,860	TOTAL: \$8,860	05/29/66-05/31/77	FY75: \$25,137	TOTAL: \$282,006
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dupree, A. K.	GSFC/Underhill, A. B.	11-Astronomy	Barghoorn, E. S.	HQ-SL/Young, R. S.	32-Geological Sci
(51-850 868-12-00)			(10-840 192-55-62)	(10-870 189-00-00)	
NAS 5-22343	Harvard University	2302	NGL 22-007-117	Harvard University	2309
Spectroheliometer for solar maximum measurements			Investigation of the behavior of ultrashort light pulses of picosecond duration in optical media		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/14/75-09/13/75	FY75: \$50,000	TOTAL: \$50,000	04/22/68-01/31/78	FY75: \$30,000	TOTAL: \$265,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Reeves, E. M.	GSFC/Donley, J. L.	11-Astronomy	Bloembergen, N.	GSFC/McAvoy, N.	13-Physics
Timothy, J. G.			(51-704 506-20-33)	GSFC/Fitzmaurice, M. W.	(51-750 115-00-00)
(51-850 826-12-00)					

**NASA'S UNIVERSITY PROGRAM
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NGL 22-007-228 Harvard University 2310
Theoretical investigation of multiphase in Jupiter interior and possible relationship to behavior of outer atmospheric layers

<i>Period</i>	<i>Obligations</i>	
12/15/71-09/30/77	FY75: \$121,000	TOTAL: \$315,679
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Goody, R. M.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

(10-840 185-47-81)

NGL 22-007-247 Harvard University 2311
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
06/30/72-01/31/78	FY75: \$94,447	TOTAL: \$292,273
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hays, J. F.	JSC/Harris, J. W.	12-Chemistry

(72-810 388-10-01)

NGR 22-007-172 Harvard University 2312
Application of system theory methods to power processing problems

<i>Period</i>	<i>Obligations</i>	
01/09/69-01/01/75	FY75: \$2,400	TOTAL: \$77,400
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Brockett, R. W.	LERC/Lalli, V. R.	45-Elec Engr
(22-704 506-23-30)	(25-710 120-00-00)	(22-710 138-00-00)

NGR 22-007-202 Harvard University 2313
Investigations in the far ultraviolet solar spectrum

<i>Period</i>	<i>Obligations</i>	
11/05/70-06/30/75	FY75: \$150,000	TOTAL: \$905,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Goldberg, L.	HQ-SG/Weldon, J. M.	11-Astronomy
	HQ-SG/Oertel, G. K.	

(10-850 879-11-00)

NGR 22-007-242 Harvard University 2314
Theoretical researches into planetary atmospheres and their influence upon surface features

<i>Period</i>	<i>Obligations</i>	
06/13/72-06/14/74	FY75:	TOTAL: \$27,672
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Goody, R. M.	HQ-SL/Fellows, R. F.	31-Atmos Sci

(10-840 185-00-00)

NGR 22-007-256 Harvard University 2315
Bone metabolism and hormones

<i>Period</i>	<i>Obligations</i>	
03/28/73-01/01/76	FY75: \$20,000	TOTAL: \$69,132
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tashjian, A. H., Jr.	ARC/Young, D. R.	52-Clinical Med
(21-970 970-21-14)	(21-970 970-21-61)	

NGR 22-007-257 Harvard University 2316
Spectra of solar radio bursts

<i>Period</i>	<i>Obligations</i>	
04/11/73-12/31/76	FY75: \$35,000	TOTAL: \$110,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Maxwell, A.	HQ-SG/Weldon, J. M.	11-Astronomy
	HQ-SG/Jordan, S. D.	

(10-850 188-38-52) (10-850 385-38-00)

NGR 22-007-267 Harvard University 2317
Trace elements of hydrogen and nitrogen in earth atmosphere

<i>Period</i>	<i>Obligations</i>	
09/19/73-12/31/74	FY75:	TOTAL: \$32,811
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McElroy, M. B.	HQ-SL/Fellows, R. F.	31-Atmos Sci

(10-840 185-47-81)

NGR 22-007-269 Harvard University 2318
Theoretical research in planetary physics

<i>Period</i>	<i>Obligations</i>	
09/01/73-08/31/75	FY75: \$30,000	TOTAL: \$60,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cameron, A. G.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Holt, H. E.	

(10-840 185-50-81)

NGR 22-007-270 Harvard University 2319
The operation of a balloon-borne 40-inch telescope for far infrared astronomy

<i>Period</i>	<i>Obligations</i>	
11/05/73-06/30/76	FY75: \$84,883	TOTAL: \$119,868
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fazio, G. G.	HQ-SG/Bogges, N. W.	11-Astronomy
Kelinmann, D. E.	HQ-SG/Roman, N. G.	
Noyes, R. W.		

(10-850 188-41-55) (10-850 188-00-00)

NGR 22-007-272 Harvard University 2320
Theoretical studies in space astronomy

<i>Period</i>	<i>Obligations</i>	
09/01/73-08/31/75	FY75: \$25,000	TOTAL: \$50,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cameron, A. G.	HQ-SG/Lazarus, A. J.	11-Astronomy
	HQ-SG/Opp, A. G.	

(10-850 188-46-59) (10-850 188-41-51) (10-850 188-00-00)

NGR 22-007-275 Harvard University 2321
Waves in the equatorial stratosphere

<i>Period</i>	<i>Obligations</i>	
01/01/74-08/31/75	FY75:	TOTAL: \$25,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lindzen, R. S.	GSFC/Theon, J. S.	31-Atmos Sci

(51-680 175-61-42)

NGR 22-007-285 Harvard University 2322
Stellar chromospheres and coronas

<i>Period</i>	<i>Obligations</i>	
05/01/74-10/31/75	FY75:	TOTAL: \$8,900
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Noyes, R. W.	GSFC/Kupperian, J. E.	11-Astronomy

(51-850 831-43-00)

NSG 2031 Harvard University 2323
Chemistry and dynamics of trace stratospheric gases

<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/76	FY75: \$49,005	TOTAL: \$94,005
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McElroy, M. B.	ARC/Poppoff, I. G.	31-Atmos Sci
Wolfsy, S. C.	ARC/Whitten, R. C.	

(21-920 989-10-00)

**NASA'S UNIVERSITY PROGRAM
MASSACHUSETTS (Continued)**

NSG 2081 **Harvard University** **2324**
Solar X-ray astronomy rocket program
Period *Obligations*
04/01/75-09/30/75 **FY75: \$13,852** **TOTAL: \$13,852**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Vaiana, G. S. ARC/Bradski, M. 11-Astronomy
(21-850 879-11-00)

NSG 7009 **Harvard University** **2325**
Fourth international Conference on Ultraviolet and X-ray Spectroscopy
Period *Obligations*
02/01/74-01/31/75 **FY75:** **TOTAL: \$13,282**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Parkinson, W. H. HQ-SG/Weldon, J. M. 11-Astronomy
HQ-SG/Roman, N. G.
(10-850 188-38-53) (10-850 188-41-51)

NSG 7018 **Harvard University** **2326**
Transition and coronal line profiles in the solar extreme ultraviolet measurements
Period *Obligations*
03/01/74-06/30/76 **FY75:** **TOTAL: \$27,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Noyes, R. W. HQ-SG/Timothy, A. F. 11-Astronomy
(10-850 188-38-64)

NSG 7095 **Harvard University** **2327**
Reflection spectra of sodium doped ammonia ice
Period *Obligations*
10/25/74-08/31/75 **FY75: \$35,305** **TOTAL: \$35,305**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pipkin, F. M. HQ-SL/Fellows, R. F. 31-Atmos Sci
HQ-SL/Brunk, W. E.
(10-840 185-47-83)

NAS 1-9684 **Massachusetts Institute of Technology** **2328**
Participation in the science planning for the Viking 1975 missions in the area of molecular analysis
Period *Obligations*
05/01/70-03/31/77 **FY75: \$144,180** **TOTAL: \$595,469**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Biemann, K. LARC/Williams, T. S., Jr. 39-Env Sci, NEC
LARC/Glenny, W. R.
(23-840 815-20-00)

NAS 1-9691 **Massachusetts Institute of Technology** **2329**
Participation in the science planning for the Viking 1975 missions in the area of biology
Period *Obligations*
06/15/70-03/31/77 **FY75: \$4,427** **TOTAL: \$51,189**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Rich, A. LARC/Williams, T. S., Jr. 51-Biology
LARC/Glenny, W. R.
(23-840 815-20-00) (23-840 815-00-00)

NAS 1-9702 **Massachusetts Institute of Technology** **2330**
Participation in the science planning for the Viking 1975 missions in the area of radio science
Period *Obligations*
05/20/70-03/31/77 **FY75: \$35,000** **TOTAL: \$106,500**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Shapiro, I. I. LARC/Williams, T. S., Jr. 99-Multi-Discip
LARC/Glenny, W. R.
(23-840 815-20-00) (23-840 815-00-00)

NAS 1-10693 **Massachusetts Institute of Technology** **2331**
Development of experiments for microwave temperature sounding of the mesosphere and upper stratosphere (AAFE)
Period *Obligations*
06/25/71-09/24/75 **FY75:** **TOTAL: \$174,778**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Staelin, D. H. LARC/Kendall, B. M. 31-Atmos Sci
(23-620 630-52-00)

NAS 2-7262 **Massachusetts Institute of Technology** **2332**
Study of gust response & alleviation for propeller in cruising flight
Period *Obligations*
11/06/72-12/31/76 **FY75: \$18,900** **TOTAL: \$139,351**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ham, N. D. ARC/Rabbott, J. P., Jr. 41-Aero Engr
Deyst, J. J., Jr. ARC/Johnson, W. R.
Tong, P.
(21-702 760-63-02) (21-702 760-00-00)

NAS 2-7620 **Massachusetts Institute of Technology** **2333**
Cost study of noise reduction in tilt rotor aircraft
Period *Obligations*
06/01/73-03/31/76 **FY75: \$65,000** **TOTAL: \$140,620**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Faulkner, H. B. ARC/Rabbott, J. P., Jr. 41-Aero Engr
Simpson, R. B. ARC/McCloud, J. L., III
(21-702 505-10-22) (21-701 791-93-22)

NAS 2-8157 **Massachusetts Institute of Technology** **2334**
Study of air transportation demand
Period *Obligations*
05/21/74-11/01/75 **FY75: \$13,000** **TOTAL: \$34,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Simpson, R. W. ARC/Williams, L. J. 41-Aero Engr
ARC/Waters, M. H.
(21-701 791-40-03) (21-701 791-93-03) (15-701 791-93-03)

NAS 3-17534 **Massachusetts Institute of Technology** **2335**
Development and test of a polymeric early warning fire alarm device
Period *Obligations*
09/17/73-09/16/74 **FY75:** **TOTAL: \$56,032**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Senturia, S. D. LERC/Hacker, P. T. 19-Phys Sci, NEC
(22-250 141-93-02)

NAS 5-11062 **Massachusetts Institute of Technology** **2336**
IMP H&J plasma experiment
Period *Obligations*
05/17/68-11/01/76 **FY75: \$259,000** **TOTAL: \$2,039,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bridge, H. S. GSFC/Davis, M. A. 13-Physics
(51-850 861-42-00)

**NASA'S UNIVERSITY PROGRAM
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NAS 5-11082 Massachusetts Institute of Technology 2337
Studies and design for a rotating wheel experiment to provide a two color survey of the positions and time variations of cosmic X-ray sources

<i>Period</i>	<i>Obligations</i>	
06/30/67-06/30/75	FY75: \$39,803	TOTAL: \$2,090,427
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Clark, G. W.	GSFC/Ostaf, W. A.	19-Phys Sci, NEC
(51-850 821-22-00)		

NAS 5-11450 Massachusetts Institute of Technology 2338
An experiment to perform X-ray astronomy on the SAS-C spacecraft

<i>Period</i>	<i>Obligations</i>	
06/16/71-06/31/75	FY75: \$1,496,361	TOTAL: \$8,083,161
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Clark, G. W.	GSFC/Piterski, N. J.	11-Astronomy
(51-850 878-12-00)		

NAS 5-21980 Massachusetts Institute of Technology 2339
Nimbus F scanning microwave spectrometer data reduction and analysis

<i>Period</i>	<i>Obligations</i>	
01/25/74-02/28/77	FY75: \$315,000	TOTAL: \$415,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Staelin, D. H.	GSFC/Ratliff, R. B.	31-Atmos Sci
(51-680 604-00-00)		

NAS 5-22485 Massachusetts Institute of Technology 2340
Microwave spectrometer for meteorological observations from satellites

<i>Period</i>	<i>Obligations</i>	
06/26/75-07/25/76	FY75: \$20,000	TOTAL: \$20,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	GSFC/ Unavailable	11-Astronomy
(51-630 639-10-00)		

NAS 8-24364 Massachusetts Institute of Technology 2341
Integration of NASA-Sponsored studies on aluminum welding

<i>Period</i>	<i>Obligations</i>	
05/21/69-11/15/73	FY75:	TOTAL: \$32,317
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Masubuchi, K.	MSFC/Hasemeyer, E. A.	49-Engr, NEC
(62-980 904-00-00)		

NAS 8-27972 Massachusetts Institute of Technology 2342
Design, development, & operations of the AXR-2 integrated modulation collimator experiment under the HEAO program

<i>Period</i>	<i>Obligations</i>	
06/23/72-04/15/78	FY75: \$87,000	TOTAL: \$299,220
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bradt, H. V.	MSFC/Bodie, W. G.	11-Astronomy
(62-850 832-12-00)	MSFC/Gustin, R. A.	(62-850 832-00-00)

NAS 8-27975 Massachusetts Institute of Technology 2343
Design and development of the AGR-5 high energy X-ray experiment under the HEAO program

<i>Period</i>	<i>Obligations</i>	
06/23/72-04/15/78	FY75: \$95,000	TOTAL: \$933,672
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lewin, W. H.	MSFC/Jordan, W.	11-Astronomy
(62-850 832-12-00)	MSFC/Jones, J. B.	(62-850 832-00-00)

NAS 8-28055 Massachusetts Institute of Technology 2344
Research study on the design and control of remote manipulators

<i>Period</i>	<i>Obligations</i>	
01/05/72-09/30/74	FY75:	TOTAL: \$80,600
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Whitney, D. E.	MSFC/Borelli, M. T.	46-Mech Engr
(62-970 970-63-20)	(62-970 970-63-00)	

NAS 8-28306 Massachusetts Institute of Technology 2345
Skylab indium antimonide crystals experiment

<i>Period</i>	<i>Obligations</i>	
11/08/72-04/30/74	FY75: \$499	TOTAL: \$32,499
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gatos, H. C.	MSFC/Adams, W. R.	19-Phys Sci, NEC
Witt, A. F.	MSFC/Johnston, M. H.	
(62-960 948-90-95)		

NAS 8-30301 Massachusetts Institute of Technology 2346
Capability and limitations of relativistic gravity measurements using radio astronomy methods

<i>Period</i>	<i>Obligations</i>	
12/01/73-06/30/75	FY75: \$2,000	TOTAL: \$6,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Boyd, P.	MSFC/Decker, R.	13-Physics
Counselman, H. C. C., III	MSFC/Hale, D. P.	
(62-850 188-41-54)	(62-850 188-00-00)	

NAS 8-30531 Massachusetts Institute of Technology 2347
Participation in HEAO mission B definition study

<i>Period</i>	<i>Obligations</i>	
12/10/73-05/31/74	FY75:	TOTAL: \$123,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Clark, G. W.	MSFC/Manning, H. S.	11-Astronomy
(62-850 832-12-00)	MSFC/Powers, J.	(62-850 832-00-00)

NAS 8-30537 Massachusetts Institute of Technology 2348
Solidification (crystal growth) in the absence of gravitational forces

<i>Period</i>	<i>Obligations</i>	
12/03/73-11/30/75	FY75: \$100,000	TOTAL: \$150,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gatos, H. C.	MSFC/Davidson, M. C.	47-Materials Engr
Whitt, A. F.	MSFC/Schafer, C. F.	
(62-630 179-12-14)		

NAS 8-30576 Massachusetts Institute of Technology 2349
Quantitative determination of zero-effects on electronic materials processing

<i>Period</i>	<i>Obligations</i>	
12/10/73-03/31/76	FY75:	TOTAL: \$85,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gatos, H. C.	MSFC/Adams, W. R.	19-Phys Sci, NEC
Witt, A. F.	MSFC/Boese, A.	
(62-930 966-30-00)		

**NASA'S UNIVERSITY PROGRAM
MASSACHUSETTS (Continued)**

NAS 8-30752 Massachusetts Institute of Technology 2350
Design, development and operations of the HEAO mission B
telescope experiment

<i>Period</i>	<i>Obligations</i>	
06/01/74-12/31/79	FY75: \$743,000	TOTAL: \$743,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Clark, G. W.	MSFC/Manning, H. S.	11-Astronomy
Bradt, H. V.	MSFC/Power, J. A.	
Cabizares, C. R.		
(62-850 832-12-00)		

NAS 8-31149 Massachusetts Institute of Technology 2351
Earth simulation experiment for cloud physics laboratory on
spacelab or shuttle

<i>Period</i>	<i>Obligations</i>	
12/03/74-02/25/76	FY75: \$24,960	TOTAL: \$24,960
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hart, J. E.	MSFC/Hill, C. K.	32-Geological Sci
	MSFC/Vaughn, O. H.	
(62-680 175-11-71)		

NAS 8-31350 Massachusetts Institute of Technology 2352
Uniform dispersions of crystallization processing

<i>Period</i>	<i>Obligations</i>	
07/01/75-03/13/76	FY75: \$56,120	TOTAL: \$56,120
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Uhlmann, D. R.	MSFC/Chassay, R. P.	47-Materials Engr
(62-630 179-42-20)		

NAS 9-12334 Massachusetts Institute of Technology 2353
Apollo passive seismic experiment

<i>Period</i>	<i>Obligations</i>	
01/07/72-01/31/76	FY75: \$105,060	TOTAL: \$315,168
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Press, F.	JSC/Eichelman, W. F.	31-Atmos Sci
(72-810 383-31-00)	(72-810 383-25-03)	

NAS 9-12485 Massachusetts Institute of Technology 2354
Mechanisms of deterioration of nutrients

<i>Period</i>	<i>Obligations</i>	
03/17/72-04/01/77	FY75: \$65,000	TOTAL: \$225,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Flink, J. M.	JSC/Heidelbaugh, N. D.	
		53-Other Medical
(72-970 970-51-14)	(72-970 970-51-00)	

NASW 2412 Massachusetts Institute of Technology 2355
Air transportation systems analysis for aeronautical technologist

<i>Period</i>	<i>Obligations</i>	
06/20/72-09/30/73	FY75: \$210,399	TOTAL: \$210,399
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Simpon, R.	HQ-RO/Enders, J. H.	99-Multi-Discip
	HQ-RD/Cherry, G. W.	
(10-701 791-91-51)	(10-763 133-00-00)	

NASW 2787 Massachusetts Institute of Technology 2356
Study in the area of international networking aspects and
implications of high data rates

<i>Period</i>	<i>Obligations</i>	
05/02/75-12/31/75	FY75: \$40,000	TOTAL: \$40,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	HQ-EC/Freibaum, J.	45-Elec Engr
(10-601 644-01-02)		

NGL 22-009-003 Massachusetts Institute of Technology 2357
Mechanisms of alloy strengthening by fine particle dispersions
emphasizing reduction of nonrefractory oxides, stability of metals
oxide systems & solid solution in metal-metal oxide alloys

<i>Period</i>	<i>Obligations</i>	
11/15/70-01/14/77	FY75: \$1,013,770	TOTAL: \$1,013,770
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Grant, N. J.	LERC/Quatnetz, M.	47-Materials Engr
(22-704 501-01-06)	(10-740 129-00-00)	

NGL 22-009-013 Massachusetts Institute of Technology 2358
Research on problems of communication in space environment

<i>Period</i>	<i>Obligations</i>	
12/27/62-10/31/77	FY75: \$70,000	TOTAL: \$1,276,700
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kennedy, R. S.	HQ-RE/Catow, C. E.	45-Elec Engr
	GSFC/McAvoy, N.	
(10-704 506-20-31)	(10-704 502-03-12)	

NGL 22-009-015 Massachusetts Institute of Technology 2359
Theoretical and experimental investigations of interplanetary
medium and in gamma ray astronomy

<i>Period</i>	<i>Obligations</i>	
01/01/63-12/31/77	FY75: \$200,000	TOTAL: \$4,160,598
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bridge, H. S.	HQ-SG/Schmerling, E. R.	13-Physics
	HQ-SG/Opp, A. G.	
(10-850 188-36-55)	(10-850 188-46-59)	(10-850 385-36-00)

NGL 22-009-016 Massachusetts Institute of Technology 2360
Electromagnetic investigations of planetary and solar atmospheres
and the lunar surface

<i>Period</i>	<i>Obligations</i>	
05/01/63-04/30/75	FY75: \$1,391,075	TOTAL: \$1,391,075
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Barrett, A. H.	HQ-SL/Brunk, W. E.	32-Geological Sci
(10-840 185-00-00)		

NGL 22-009-019 Massachusetts Institute of Technology 2361
Multidisciplinary research in space-related physical, engineering,
social and life sciences

<i>Period</i>	<i>Obligations</i>	
09/27/63-02/28/75	FY75: \$8,051,886	TOTAL: \$8,051,886
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harrington, J. V.	HQ-P/Redding, E. R.	99-Multi-Discip
(10-370 183-00-00)	(10-870 189-00-00)	(10-750 125-00-00)

NGL 22-009-025 Massachusetts Institute of Technology 2362
Human dynamic space orientation using techniques of control
theory

<i>Period</i>	<i>Obligations</i>	
01/30/64-12/01/76	FY75: \$980,091	TOTAL: \$980,091
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Young, L. R.	LARC/Whitten, J. B.	41-Aero Engr
	ARC/Sadoff, M.	
(23-750 135-00-00)		

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NGL 22-009-124 Massachusetts Institute of Technology 2363
Control optimization stabilization and computation of algorithms for space applications

<i>Period</i>	<i>Obligations</i>	
03/30/66-09/01/77	FY75: \$70,000	TOTAL: \$600,289
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Athans, M.	ARC/Doolin, B. F.	49-Engr, NEC
Mitter, S. K.	ARC/Erzberger, H.	
Johnson, T. L.		
(21-702 505-07-11)		

NGL 22-009-125 Massachusetts Institute of Technology 2364
Studies on the relationship between crystalline structure and superconductivity

<i>Period</i>	<i>Obligations</i>	
05/05/66-03/31/77	FY75: \$279,624	TOTAL: \$279,624
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gatos, H. C.	MSFC/Dalins, I.	13-Physics
	MSFC/Stern, H. E.	
(62-704 502-01-03)	(10-740 129-00-00)	

NGL 22-009-187 Massachusetts Institute of Technology 2365
Lunar geophysics, as related to the Apollo applications program

<i>Period</i>	<i>Obligations</i>	
09/02/66-02/28/78	FY75: \$90,000	TOTAL: \$638,782
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Press, F.	HQ-SM/Kosofsky, L. J.	32-Geological Sci
Burns, R. G.	HQ-SM/Roberson, F. I.	
Counselman, H. C. C., III		
(10-810 195-20-02)	(10-810 195-42-65)	

NGL 22-009-308 Massachusetts Institute of Technology 2366
Maturation and development of mechanisms of orientation and postural control

<i>Period</i>	<i>Obligations</i>	
12/01/67-09/01/77	FY75: \$30,000	TOTAL: \$726,646
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Teuber, H. L.	ARC/Daunton, N. G.	69-Psych, NEC
Held, R.		
(21-970 970-21-11)	(21-970 970-21-53)	

NGL 22-009-383 Massachusetts Institute of Technology 2367
Research in propulsion and power generation

<i>Period</i>	<i>Obligations</i>	
01/16/69-08/31/77	FY75: \$100,000	TOTAL: \$780,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kerrebrock, J. L.	LERC/McNally, W. D.	41-Aero Engr
Oliver, D. A.		
McCune, J. E.		
(22-702 505-04-21)	(22-760 126-00-00)	(22-762 132-00-00)

NGL 22-009-521 Massachusetts Institute of Technology 2368
Composition and structure of planetary atmospheres

<i>Period</i>	<i>Obligations</i>	
08/10/70-06/30/77	FY75: \$83,590	TOTAL: \$361,911
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lewis, J. S.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	
(10-840 185-47-81)		

NGL 22-009-548 Massachusetts Institute of Technology 2369
Flight control systems research

<i>Period</i>	<i>Obligations</i>	
08/17/70-08/30/76	FY75: \$282,818	TOTAL: \$282,818
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Whitaker, H. P.	FRC/Szalai, K. J.	41-Aero Engr
	FRC/Rediess, H. A.	
(24-704 501-08-10)	(24-704 501-24-01)	(24-704 501-26-09)

NGL 22-009-638 Massachusetts Institute of Technology 2370
Research in space science

<i>Period</i>	<i>Obligations</i>	
03/03/72-02/28/78	FY75: \$200,000	TOTAL: \$800,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McCarthy, J. F., Jr.	HQ-P/Redding, E. R.	99-Multi-Discip
(10-371 340-00-00)		

NGL 22-009-640 Massachusetts Institute of Technology 2371
Joint university research program - future air transportation technological needs

<i>Period</i>	<i>Obligations</i>	
11/16/71-10/31/77	FY75: \$50,000	TOTAL: \$249,999
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Simpson, R. W.	LARC/Reid, H. J., Jr.	41-Aero Engr
	LARC/Mace, W. D.	
(23-702 505-07-12)	(23-750 135-00-00)	

NGR 22-009-005 Massachusetts Institute of Technology 2372
Detection & identification of organic matter by mass spectrometry

<i>Period</i>	<i>Obligations</i>	
12/01/61-06/30/76	FY75: \$70,008	TOTAL: \$790,762
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Biemann, K.	HQ-SL/Young, R. S.	51-Biology
(10-840 192-55-63)	(10-840 192-55-62)	

NGR 22-009-102 Massachusetts Institute of Technology 2373
Investigation of the effect of space environment on replica gratings

<i>Period</i>	<i>Obligations</i>	
06/28/66-12/01/77	FY75: \$193,638	TOTAL: \$193,638
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Biemann, K.	HQ-SS/Hovnanian	42-Astro Engr
	HQ-SL/Geib, D. S.	
(10-860 849-00-00)	(10-860 848-00-00)	

NGR 22-009-277 Massachusetts Institute of Technology 2374
The prebiotic synthesis of polynucleotides and polynucleotide-directed polypeptides

<i>Period</i>	<i>Obligations</i>	
12/01/67-06/30/76	FY75: \$40,000	TOTAL: \$389,802
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rich, A.	HQ-SL/Young, R. S.	12-Chemistry
(10-840 192-55-61)		

NGR 22-009-339 Massachusetts Institute of Technology 2375
Investigation of containment/control of fragments from bursting turbine rotors

<i>Period</i>	<i>Obligations</i>	
06/14/68-06/31/76	FY75: \$79,934	TOTAL: \$469,997
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Witmer, E. A.	LERC/Siewert, R. D.	41-Aero Engr
Leech, J. W.	LERC/Holmes, A. G.	
(22-702 505-08-22)	(22-704 501-38-13)	

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NGR 22-009-366 Massachusetts Institute of Technology **2376**
Mariner V tracking-data analysis

<i>Period</i>	<i>Obligations</i>
03/11/69-12/31/73	FY75: TOTAL: \$25,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Shapiro, I. I.	HQ-SG/Roman, N. G. 31-Atmos Sci
(10-850 385-00-00)	

NGR 22-009-583 Massachusetts Institute of Technology **2383**
Spectroscopy of the asteroids

<i>Period</i>	<i>Obligations</i>
10/26/71-03/31/75	FY75: \$30,000 TOTAL: \$100,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
McCord, T. B.	HQ-SG/Dubin, M. 11-Astronomy
(10-850 188-45-51)	HQ-SL/Brunk, W. E.

NGR 22-009-378 Massachusetts Institute of Technology **2377**
Study of pollutants from jet aircraft

<i>Period</i>	<i>Obligations</i>
02/14/69-07/30/76	FY75: \$78,812 TOTAL: \$403,387
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Heywood, J. B.	LERC/Mularz, E. J. 43-Chem Engr
Chigier, N. A.	LERC/Jones, R. E.
Flagan, R. S.	
(22-702 743-02-22)	(22-704 501-24-20) (22-740 129-00-00)

NGR 22-009-627 Massachusetts Institute of Technology **2384**
Control of serotonin-containing neurons in the brain, by plasma tryptophan

<i>Period</i>	<i>Obligations</i>
08/04/71-11/01/75	FY75: \$60,000 TOTAL: \$243,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Wurtman, R. J.	ARC/Winget, C. M. 53-Other Medical
Fernstrom, J.	ARC/Danelis, J. V.
Lynch, H. J.	
(21-970 970-21-52)	(21-970 970-21-00)

NGR 22-009-421 Massachusetts Institute of Technology **2378**
Microwave studies of the earth's atmosphere in support of meteorological satellite observations

<i>Period</i>	<i>Obligations</i>
06/30/70-06/30/73	FY75: TOTAL: \$184,383
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Barrett, A. H.	GSFC/Wilheit, T. T. 31-Atmos Sci
(51-680 160-44-54)	

NGR 22-009-646 Massachusetts Institute of Technology **2385**
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>
06/16/71-01/31/76	FY75: \$64,796 TOTAL: \$280,496
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Uhlmann, D. R.	JSC/Harris, J. W. 47-Materials Engr
(72-810 388-10-01)	

NGR 22-009-473 Massachusetts Institute of Technology **2379**
Planetary astronomy

<i>Period</i>	<i>Obligations</i>
06/10/70-12/31/75	FY75: \$81,100 TOTAL: \$422,600
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
McCord, T. B.	HQ-SL/Brunk, W. E. 11-Astronomy
	HQ-SL/Fellows, R. F.
(10-840 196-41-80)	(10-840 196-00-00)

NGR 22-009-658 Massachusetts Institute of Technology **2386**
Novel space fastening techniques suitable for assembly and disassembly by teleoperators

<i>Period</i>	<i>Obligations</i>
12/06/71-06/30/74	FY75: TOTAL: \$30,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Sheridan, T. B.	HQ-NS/Miller, D. J. 46-Mech Engr
	HQ-NS/Johnsen, E. G.
(10-720 112-00-00)	

NGR 22-009-526 Massachusetts Institute of Technology **2380**
Astronomy in the region between 1 mm to 0.1 mm wavelengths

<i>Period</i>	<i>Obligations</i>
09/22/70-09/30/75	FY75: \$50,000 TOTAL: \$242,700
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Weiss, R.	HQ-SG/Bogges, N. W. 11-Astronomy
Muehlnr, D. J.	HQ-SG/Roman, N. G.
(10-850 188-41-55)	

NGR 22-009-672 Massachusetts Institute of Technology **2387**
Ground-based radar study of the moon and planets

<i>Period</i>	<i>Obligations</i>
03/06/72-06/30/76	FY75: \$99,800 TOTAL: \$175,600
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Pettengill, G. H.	HQ-SL/Brunk, W. E. 11-Astronomy
	HQ-SL/Fellows, R. F.
(10-840 196-41-82)	(10-840 196-00-00)

NGR 22-009-540 Massachusetts Institute of Technology **2381**
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>
02/08/71-01/31/76	FY75: \$65,500 TOTAL: \$371,325
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Simmons, M. G.	JSC/Harris, J. W. 13-Physics
(72-810 388-10-03)	

NGR 22-009-701 Massachusetts Institute of Technology **2388**
Integration of visual and motion requirements for flight simulation and ride quality investigation

<i>Period</i>	<i>Obligations</i>
05/18/72-11/30/76	FY75: \$128,000 TOTAL: \$328,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Young, L. R.	LARC/Queijo, M. J. 41-Aero Engr
	LARC/Miller, G. K., Jr.
(23-704 504-09-41)	(23-702 505-06-93) (23-704 504-29-14)

NGR 22-009-551 Massachusetts Institute of Technology **2382**
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>
02/11/71-01/31/76	FY75: \$63,700 TOTAL: \$246,300
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i> <i>CASE Category</i>
Burns, R. G.	JSC/Harris, J. W. 12-Chemistry
(72-810 388-10-01)	

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NGR 22-009-718 Massachusetts Institute of Technology **2389**
Spectroscopic observations of the moon, asteroids and planets from the NASA 91.5 cm airborne telescope

<i>Period</i>	<i>Obligations</i>	
03/01/73-03/31/76	FY75: \$25,000	TOTAL: \$60,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McCord, T. B.	ARC/Cameron, R. M.	11-Astronomy
Kleinmann, S. G.	ARC/Gillespie, C. M., Jr.	
(21-850 352-02-03)		

NGR 22-009-723 Massachusetts Institute of Technology **2390**
Bosch process and evaluation of Bosch carbon as a sorbent

<i>Period</i>	<i>Obligations</i>	
09/19/72-09/30/76	FY75: \$25,189	TOTAL: \$69,471
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Reid, R. C.	ARC/Quattrone, P. D.	12-Chemistry
Modell, M.		
(21-970 970-22-21)	(21-970 970-00-00)	

NGR 22-009-726 Massachusetts Institute of Technology **2391**
Projection of future trends in neuroscience

<i>Period</i>	<i>Obligations</i>	
10/12/72-10/31/75	FY75: \$15,000	TOTAL: \$60,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Worden, F. G.	ARC/Daunton, N. G.	51-Biology
Schmitt, F. O.		
(21-970 970-21-11)		

NGR 22-009-727 Massachusetts Institute of Technology **2392**
Study in numerical modeling of atmospheric phenomena

<i>Period</i>	<i>Obligations</i>	
02/01/73-01/31/76	FY75: \$80,000	TOTAL: \$235,863
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Charney, J.	GSFC/Halem, M.	31-Atmos Sci
Stone, P. H.		
(51-680 611-13-00)	(51-680 408-02-02)	

NGR 22-009-730 Massachusetts Institute of Technology **2393**
X-ray astronomy experiments from sounding rockets

<i>Period</i>	<i>Obligations</i>	
03/22/72-07/31/75	FY75: \$125,000	TOTAL: \$385,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bradt, H. V.	HQ-SG/Opp, A. G.	11-Astronomy
	HQ-SG/Roman, N. G.	
(10-850 879-11-00)		

NGR 22-009-733 Massachusetts Institute of Technology **2394**
Investigation of pilot's role & display requirements in automatic landings

<i>Period</i>	<i>Obligations</i>	
10/30/72-09/01/75	FY75: \$53,977	TOTAL: \$164,427
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Curry, R. E.	ARC/Wempe, T. E.	41-Aero Engr
	ARC/Huff, E. M.	
(21-704 504-09-33)	(21-704 501-29-02)	

NGR 22-009-735 Massachusetts Institute of Technology **2395**
EOTVOS experiment in earth orbit and related studies

<i>Period</i>	<i>Obligations</i>	
06/07/73-06/30/74	FY75:	TOTAL: \$100,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chapman, P. K.	HQ-MT/Hall, H.	13-Physics
(10-980 908-91-00)		

NGR 22-009-741 Massachusetts Institute of Technology **2396**
Optical and infrared lasers

<i>Period</i>	<i>Obligations</i>	
12/01/72-02/29/76	FY75: \$50,000	TOTAL: \$140,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Javan, A.	GSFC/McAvoy, N. A.	13-Physics
(51-704 502-03-11)	(51-704 502-00-00)	

NGR 22-009-766 Massachusetts Institute of Technology **2397**
Monitoring spacecraft atmosphere contaminants by laser absorption spectroscopy

<i>Period</i>	<i>Obligations</i>	
01/01/74-12/30/76	FY75: \$2,000	TOTAL: \$54,555
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Steinfeld, J. I.	ARC/Quattrone, P. D.	12-Chemistry
(21-970 970-22-21)		

NGR 22-009-778 Massachusetts Institute of Technology **2398**
Low spectral resolution studies by large space telescope

<i>Period</i>	<i>Obligations</i>	
10/01/73-09/30/75	FY75: \$4,330	TOTAL: \$10,475
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McCord, T. B.	GSFC/Sobieski, S.	11-Astronomy
	GSFC/Meese, K. J.	
(51-850 893-78-56)	(51-850 188-78-58)	

NGR 22-009-781 Massachusetts Institute of Technology **2399**
Exploitation of advanced composite materials to lightly loaded structures

<i>Period</i>	<i>Obligations</i>	
04/16/73-10/31/75	FY75: \$14,932	TOTAL: \$74,773
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Mar, J. W.	LARC/Card, M. F.	41-Aero Engr
	LARC/Mikulas, M. M.	
(23-702 505-02-42)	(23-704 501-21-23)	

NGR 22-009-785 Massachusetts Institute of Technology **2400**
Research related to the X-ray astronomy experiment on the OSO-7

<i>Period</i>	<i>Obligations</i>	
06/20/73-08/15/75	FY75: \$13,762	TOTAL: \$62,614
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Clark, G. W.	HQ-SG/Opp, A. G.	13-Physics
	HQ-SG/Roman, N. G.	
(10-850 385-41-00)		

NGR 22-009-786 Massachusetts Institute of Technology **2401**
Analysis of satellite plasma data

<i>Period</i>	<i>Obligations</i>	
06/22/73-09/30/74	FY75:	TOTAL: \$29,981
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bridge, H. S.	HQ-SG/Berko, F. W.	13-Physics
(10-850 385-00-00)		

NGR 22-009-790 Massachusetts Institute of Technology **2402**
Remote compositional mapping of the lunar surface

<i>Period</i>	<i>Obligations</i>	
06/22/73-01/31/76	FY75: \$404,000	TOTAL: \$624,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McCord, T. P.	HQ-SM/Kosofsky, L. J.	32-Geological Sci
	HQ-SM/Roberson, F. I.	
(10-810 195-20-01)		

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NGR 22-009-798 Massachusetts Institute of Technology 2403
Role of brain areas controlling eye-head coordination in monkeys

<i>Period</i>	<i>Obligations</i>	
09/01/73-09/01/75	FY75: \$30,000	TOTAL: \$60,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bizzi, E.	ARC/Daunton, N. G.	51-Biology
	ARC/Billingham, J.	
(21-970 970-21-11)	(21-970 970-24-01)	(21-970 970-00-00)

NSG 1018 Massachusetts Institute of Technology 2410
Multiple model adaptive control method for flight control systems

<i>Period</i>	<i>Obligations</i>	
03/06/74-09/05/75	FY75: \$48,600	TOTAL: \$87,600
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Athens, M.	LARC/Elliott, J. R.	41-Aero Engr
	LARC/Bird, J. D.	
(23-702 512-51-02)		

NGR 22-009-799 Massachusetts Institute of Technology 2404
Liquid phase catalytic reforming of organic spacecraft waste

<i>Period</i>	<i>Obligations</i>	
10/01/73-08/14/76	FY75: \$31,840	TOTAL: \$56,840
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Modell, M.	ARC/Quattrone, P. D.	12-Chemistry
(21-970 970-22-21)	(21-970 970-22-23)	(21-970 970-00-00)

NSG 1048 Massachusetts Institute of Technology 2411
Wet photoelectric cells, conversion, transfer and storage of intense optical energy

<i>Period</i>	<i>Obligations</i>	
05/15/74-05/14/76	FY75: \$56,000	TOTAL: \$115,815
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wrighton, M. S.	LARC/Hess, R. V.	12-Chemistry
(23-704 502-10-01)		

NGR 22-009-804 Massachusetts Institute of Technology 2405
Analysis of Mariner 9 radio tracking data

<i>Period</i>	<i>Obligations</i>	
07/01/73-12/31/74	FY75:	TOTAL: \$80,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Shapiro, I. I.	HQ-SL/Fellows, R. F.	31-Atmos Sci
(10-840 384-47-81)		

NSG 1051 Massachusetts Institute of Technology 2412
Nonlinear aeroelasticity research

<i>Period</i>	<i>Obligations</i>	
06/01/74-08/15/75	FY75:	TOTAL: \$36,100
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dugundji, J.	LARC/Reed, W. H., III	41-Aero Engr
	LARC/Hess, R. W.	
(23-704 501-22-04)		

NGR 22-009-805 Massachusetts Institute of Technology 2406
Flow-generated noise and aeroacoustic instabilities in ducts and silencers

<i>Period</i>	<i>Obligations</i>	
09/01/73-08/31/76	FY75:	TOTAL: \$45,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ingard, K. U.	LERC/Baumeister, K. J.	41-Aero Engr
	LERC/Rice, E. J.	
(22-704 501-15-83)		

NSG 1112 Massachusetts Institute of Technology 2413
A dual-mode generalized ratio approach to self-reorganizing digital flight control system design

<i>Period</i>	<i>Obligations</i>	
10/01/74-09/15/75	FY75: \$42,500	TOTAL: \$42,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Willisky, A. S.	LARC/Montgomery, R. C.	41-Aero Engr
(23-702 512-51-02)		

NGR 22-009-818 Massachusetts Institute of Technology 2407
Aerodynamics of bird flight

<i>Period</i>	<i>Obligations</i>	
09/01/73-08/31/77	FY75: \$34,630	TOTAL: \$53,210
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Widnall, S. E.	LARC/Hoad, D. R.	41-Aero Engr
	LARC/Margason, R. J.	
(23-702 505-10-21)	(23-702 760-63-02)	

NSG 1123 Massachusetts Institute of Technology 2414
Compilation of factors for computing airport delays

<i>Period</i>	<i>Obligations</i>	
11/12/74-08/17/75	FY75: \$11,526	TOTAL: \$11,526
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Odoni, A. R.	LARC/Mace, W. D.	41-Aero Engr
Simpson, R. W.		
(23-702 505-07-12)		

NGR 22-009-826 Massachusetts Institute of Technology 2408
Neural orientation growth and maintenance

<i>Period</i>	<i>Obligations</i>	
09/01/73-09/01/75	FY75: \$30,000	TOTAL: \$60,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nauta, W. J.	ARC/Daunton, N. G.	51-Biology
Teuber, H. L.		
(21-970 970-21-11)	(21-970 970-00-00)	

NSG 1190 Massachusetts Institute of Technology 2415
Characterization of high energy gap semi-conductor

<i>Period</i>	<i>Obligations</i>	
10/01/75-09/30/78	FY75: \$50,000	TOTAL: \$50,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gatos, H. C.	LARC/Byvik, C. E.	47-Materials Engr
	LARC/Conway, E. J.	
(23-704 506-16-13)		

NGR 22-009-839 Massachusetts Institute of Technology 2409
Wideband recording system for very long baseline interferometry

<i>Period</i>	<i>Obligations</i>	
04/01/74-03/31/76	FY75: \$79,000	TOTAL: \$117,690
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Shapiro, I. I.	GSFC/Clark, T. A.	99-Multi-Discip
	GSFC/Ryan, J. W.	
(51-630 161-05-03)	(51-630 369-05-03)	(51-630 653-00-00)

NSG 2010 Massachusetts Institute of Technology 2416
Study of impact on space shuttle on stratospheric ozone

<i>Period</i>	<i>Obligations</i>	
03/01/74-12/31/75	FY75: \$82,000	TOTAL: \$209,910
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Prinn, R. G.	ARC/Reynolds, R. T.	31-Atmos Sci
(21-920 989-10-00)	(21-704 502-24-87)	

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NSG 2024 **Massachusetts Institute of Technology** **2417**
Lighter than air vehicles study

<i>Period</i>	<i>Obligations</i>	
05/01/74-09/01/75	FY75: \$4,159	TOTAL: \$79,059
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Simpson, R. W.	ARC/Mascy, A. C.	41-Aero Engr
(21-701 791-40-03)		

NSG 2032 **Massachusetts Institute of Technology** **2418**
Research on habituation to novel visual-vestibular environments with particular reference to space flight

<i>Period</i>	<i>Obligations</i>	
07/01/74-09/15/75	FY75: \$16,003	TOTAL: \$91,003
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Young, L. R.	ARC/Daunton, N. G.	59-Life Sci, NEC
(21-030 997-00-00)	(21-970 970-21-11)	(21-970 970-24-01)

NSG 2044 **Massachusetts Institute of Technology** **2419**
A gust-alleviating control system for a proprotor aircraft in cruising flight

<i>Period</i>	<i>Obligations</i>	
10/01/74-10/01/75	FY75: \$50,286	TOTAL: \$50,286
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Whittaker, H. P.	ARC/Rabbott, J. P., Jr.	41-Aero Engr
(21-702 505-10-22)	ARC/Johnson, W. R.	

NSG 2076 **Massachusetts Institute of Technology** **2420**
Workshop on systems reliability issues for aircraft

<i>Period</i>	<i>Obligations</i>	
03/01/75-12/31/75	FY75: \$11,770	TOTAL: \$11,770
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Athans, M.	ARC/Doolin, B. F.	49-Engr, NEC
(21-702 505-07-11)		

NSG 3006 **Massachusetts Institute of Technology** **2421**
Turbomachine aeroelasticity

<i>Period</i>	<i>Obligations</i>	
04/01/74-12/31/74	FY75: \$710	TOTAL: \$40,710
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kerrebrock, J. L.	LERC/Orange, T. W.	41-Aero Engr
(22-704 501-01-06)	LERC/Kemp, R. H.	

NSG 3017 **Massachusetts Institute of Technology** **2422**
Silicon surface phenomena related to energy conversion

<i>Period</i>	<i>Obligations</i>	
05/01/74-07/31/76	FY75:	TOTAL: \$40,600
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gatos, H. C.	LERC/Weinberg, I.	13-Physics
(22-704 502-05-50)	LERC/Brandhorst, H. W., Jr.	

NSG 3044 **Massachusetts Institute of Technology** **2423**
Special finite elements for the analysis of flaw growth and fracture in fiber composites

<i>Period</i>	<i>Obligations</i>	
02/01/75-01/31/76	FY75: \$69,600	TOTAL: \$69,600
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McGarry, F. G.	LERC/Chamis, C. C.	49-Engr, NEC
Mandell, J. F.	LERC/Smith, G. T.	
(22-704 506-17-14)		

NSG 3046 **Massachusetts Institute of Technology** **2424**
Directional solidification of gamma/gamma prime-delta in situ composites

<i>Period</i>	<i>Obligations</i>	
06/30/75-06/30/76	FY75: \$44,963	TOTAL: \$44,963
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Flemings, M. C.	LERC/Scheuermann, C. M.	47-Materials Engr
(22-702 505-01-11)		

NSG 3061 **Massachusetts Institute of Technology** **2425**
A chromatographic analysis of the response of polymeric fire-detection devices to combustion

<i>Period</i>	<i>Obligations</i>	
05/01/75-04/30/76	FY75: \$85,000	TOTAL: \$85,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Senturia, S. D.	LERC/Gluyas, R. E.	19-Phys Sci, NEC
Kastner, M. A.	LERC/Serafini, T. T.	
Fonstad, C. G.		
(22-702 505-08-22)		

NSG 3064 **Massachusetts Institute of Technology** **2426**
Monitoring of elastic stresses by acoustic emission

<i>Period</i>	<i>Obligations</i>	
07/01/75-07/01/76	FY75: \$40,530	TOTAL: \$40,530
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Williams, J. H., Jr.	LERC/Vary, A.	47-Materials Engr
(22-704 506-90-21)		

NSG 7010 **Massachusetts Institute of Technology** **2427**
Precision selenodesy & lunar vibration thru very long baselines interferometry observation of ALSEPs

<i>Period</i>	<i>Obligations</i>	
01/01/74-12/31/75	FY75: \$50,000	TOTAL: \$112,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Counselman, H. C. C., III	HQ-SM/Kosofsky, L. J.	32-Geological Sci
Shapiro, I. I.	HQ-SM/Roberson, F. I.	
(10-810 383-20-03)		

NSG 7048 **Massachusetts Institute of Technology** **2428**
Structure and composition of a lunar region a synthesis

<i>Period</i>	<i>Obligations</i>	
03/01/74-02/28/76	FY75: \$19,000	TOTAL: \$43,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McCord, T. B.	HQ-SM/Kosofsky, L. J.	32-Geological Sci
	HQ-SM/Roberson, F. I.	
(10-810 383-20-02)		

NSG 7077 **Massachusetts Institute of Technology** **2429**
Chemical aspects of lunar origin and physical studies on lunar and meteoritic materials

<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/76	FY75: \$58,900	TOTAL: \$58,900
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lewis, J. S.	HQ-SM/Kosofsky, L. J.	32-Geological Sci
Brecher, A.	HQ-SM/Roberson, F. I.	
Skibo, D. N.		
(10-810 195-20-02)		

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NSG 7081	Massachusetts Institute of Technology	2430
Models of the composition, structure and evolution of the lunar interior		
<i>Period</i>	<i>Obligations</i>	
06/01/74-05/31/76	FY75: \$150,070	TOTAL: \$150,070
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Toksoz, M. N.	HQ-SM/Kosofsky, L. J.	32-Geological Sci
Dickey, J. S., Jr.	HQ-SM/Roberson, F. I.	
Frey, F. A.		
(10-810 383-20-01)		
NSG 7091	Massachusetts Institute of Technology	2431
Experimental relativity and gravitation study		
<i>Period</i>	<i>Obligations</i>	
09/15/74-09/14/75	FY75: \$10,000	TOTAL: \$10,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Weiss, R.	HQ-SG/Roman, N. G.	11-Astronomy
(10-850 188-41-54)		
NSG 7115	Massachusetts Institute of Technology	2432
Reanalysis of lunar data for study of lunar electro-magnetic response		
<i>Period</i>	<i>Obligations</i>	
02/01/75-01/31/76	FY75: \$24,300	TOTAL: \$24,300
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Madden, T. R.	HQ-SM/Kosofsky, L. J.	32-Geological Sci
	HQ-SM/Roberson, F. I.	
(10-810 383-20-03)		
NSG 7118	Massachusetts Institute of Technology	2433
Very long baseline interferometry observations of ALSEP transmitters		
<i>Period</i>	<i>Obligations</i>	
01/01/75-02/28/76	FY75: \$34,476	TOTAL: \$34,476
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Counselman, H. C. C., III	HQ-SM/Kosofsky, L. J.	32-Geological Sci
	HQ-SM/Roberson, F. I.	
(10-810 195-20-01)		
NSR 22-009-423	Massachusetts Institute of Technology	2434
Analysis of data from the gamma ray experiment on orbiting solar observatory		
<i>Period</i>	<i>Obligations</i>	
07/16/69-01/17/75	FY75: \$410	TOTAL: \$53,310
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Clark, G. W.	HQ-SG/Roman, N. G.	19-Phys Sci, NEC
	HQ-SG/Opp, A. G.	
(10-850 385-41-00)		
NGR 22-011-070	Northeastern University	2435
Circadian rhythms in brain & behavior		
<i>Period</i>	<i>Obligations</i>	
07/01/70-06/30/75	FY75:	TOTAL: \$108,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Terman, M.	ARC/Anliker, J. E.	61-Biol Aspects
(21-970 970-21-53)	(21-970 970-21-62)	
NGR 22-031-002	Southeastern Massachusetts University	2436
Low data rate digital space communications study		
<i>Period</i>	<i>Obligations</i>	
09/01/71-11/30/73	FY75:	TOTAL: \$9,188
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chen, C. H.	GSFC/Kutz, R. L.	45-Elec Engr
(51-840 186-00-00)		
NCA 2-85401	Tufts University	2437
Multidimensional scaling techniques applied to flight management concept		
<i>Period</i>	<i>Obligations</i>	
06/20/74-12/31/75	FY75: \$500	TOTAL: \$500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kreifieldt, J. G.	ARC/Zill, L. P.	41-Aero Engr
(21-704 504-09-33)		
NCA 2-85501	Tufts University	2438
Effects of heterogenous traffic information display		
<i>Period</i>	<i>Obligations</i>	
06/15/75-05/31/76	FY75: \$17,621	TOTAL: \$17,621
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kreifieldt, J. G.	ARC/Zill, L. P.	41-Aero Engr
(21-704 504-09-33)		
NCA 2-85601	Tufts University	2439
Investigation of the effects of a moving acoustic medium on jet noise measurements		
<i>Period</i>	<i>Obligations</i>	
07/01/75-08/31/76	FY75: \$22,320	TOTAL: \$22,320
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cole, J. E., III	ARC/Zill, L. P.	41-Aero Engr
(21-702 760-61-01)		
NGR 22-012-026	Tufts University	2440
Investigation of atraumatic techniques for monitoring car-diovascular status and conditioning		
<i>Period</i>	<i>Obligations</i>	
03/07/72-09/30/75	FY75: \$60,000	TOTAL: \$125,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Spodick, D. H.	JSC/Jackson, M. M.	53-Other Medical
(72-970 970-51-12)	(72-910 914-51-00)	
NGR 22-012-031	Tufts University	2441
Sound propagation from wind tunnel source		
<i>Period</i>	<i>Obligations</i>	
09/01/73-11/01/75	FY75: \$4,620	TOTAL: \$28,286
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cole, J. E., III	ARC/Ahtye, W. F.	49-Engr, NEC
(21-702 505-06-23)		
NAS 8-29073	University of Massachusetts - Amherst	2442
Working model of a general purpose end effector for a remote controlled manipulator		
<i>Period</i>	<i>Obligations</i>	
06/23/72-10/15/74	FY75: \$500	TOTAL: \$23,860
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Crossley, F. R.	MSFC/Patterson, J. W.	46-Mech Engr
(62-970 970-63-20)	(62-720 112-00-00)	
NGL 22-010-018	University of Massachusetts - Amherst	2443
Pulse frequency modulation in control systems		
<i>Period</i>	<i>Obligations</i>	
03/12/68-01/01/75	FY75:	TOTAL: \$131,575
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Monopoli, R. V.	GSFC/Rolinski, A. J.	45-Elec Engr
(51-500 310-20-32)		

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NGL 22-010-023 University of Massachusetts - Amherst **2444**
Theoretical studies of diffuse reflection and transmission of radiation in planetary atmospheres

<i>Period</i>	<i>Obligations</i>	
05/24/67-08/31/77	FY75: \$46,128	TOTAL: \$309,663
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Irvine, W. M.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Fellows, R. F.	
(10-840 196-00-00)	(10-840 196-41-85)	

NGL 22-010-025 University of Massachusetts - Amherst **2445**
Study of solar chromosphere from balloon altitudes

<i>Period</i>	<i>Obligations</i>	
10/24/67-06/30/75	FY75: \$40,000	TOTAL: \$576,007
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Strong, J.	HQ-SG/Weldon, J. M.	11-Astronomy
	HQ-SG/Ott, E. J.	
(10-850 188-38-52)		

NGL 22-010-089 University of Massachusetts - Amherst **2446**
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
03/16/71-01/31/77	FY75: \$6,834	TOTAL: \$86,675
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Haggerty, S. E.	JSC/Harris, J. W.	13-Physics
(72-810 388-10-01)		

NGR 22-010-039 University of Massachusetts - Amherst **2447**
A research program in solar radio physics

<i>Period</i>	<i>Obligations</i>	
10/30/68-08/31/74	FY75:	TOTAL: \$430,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hueuenin, G. R.	HQ-SG/Weldon, J. M.	11-Astronomy
	HQ-SG/Oertel, G. K.	
(10-850 188-38-52)		

NGR 22-010-054 University of Massachusetts - Amherst **2448**
Study of Mariner photography for evidences of wind action and related phenomena on Mars

<i>Period</i>	<i>Obligations</i>	
03/19/70-12/31/74	FY75:	TOTAL: \$11,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hartshorn, J. H.	HQ-SL/Dwornik, S. E.	32-Geological Sci
(10-840 384-00-00)		

NGR 22-010-076 University of Massachusetts - Amherst **2449**
Reconnaissance study of large geologic ring structures on Mars

<i>Period</i>	<i>Obligations</i>	
05/19/70-08/31/75	FY75: \$28,150	TOTAL: \$99,774
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McGill, G. E.	HQ-SL/Dwornik, S. E.	32-Geological Sci
Wise, D. U.	HQ-SL/Holt, H. E.	
(10-840 384-50-80)	(10-840 384-00-00)	

NAS 6-2585 Woods Hole Oceanographic Institution **2450**
Catalog of geoidal variation maps

<i>Period</i>	<i>Obligations</i>	
09/24/74-02/24/75	FY75: \$15,677	TOTAL: \$15,677
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bowin, C.	WFC/McGoogan, J. T.	32-Geological Sci
(53-960 948-80-81)		

NAS 9-12563 Woods Hole Oceanographic Institution **2451**
Gravity and crystal structure data analysis

<i>Period</i>	<i>Obligations</i>	
04/27/72-12/31/75	FY75: \$19,575	TOTAL: \$113,885
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bowin, C.	JSC/Hardee, S. N.	32-Geological Sci
(72-810 383-30-02)	(72-910 914-49-00)	

NAS 9-12564 Woods Hole Oceanographic Institution **2452**
Volcanology and morphology data analysis

<i>Period</i>	<i>Obligations</i>	
04/01/72-12/31/75	FY75: \$7,328	TOTAL: \$62,050
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bryan, W. B.	JSC/Hardee, S. N.	32-Geological Sci
(72-810 383-30-02)	(72-910 914-00-00)	

NGR 22-017-024 Worcester Polytechnic Institute **2453**
Production of edible carbohydrates from formaldehyde in a spacecraft

<i>Period</i>	<i>Obligations</i>	
01/17/73-12/31/75	FY75:	TOTAL: \$21,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Weiss, A. H.	ARC/Quattrone, P. D.	12-Chemistry
(21-970 970-22-24)		

MICHIGAN

NAS 1-6860 Michigan State University **2454**
Beam time on 48 MeV accelerators

<i>Period</i>	<i>Obligations</i>	
11/01/67-11/01/77	FY75:	TOTAL: \$6,840
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	LARC/Unavailable	13-Physics
(23-742 124-00-00)		

NAS 9-13332 Michigan State University **2455**
Earth resources experiment on Skylab

<i>Period</i>	<i>Obligations</i>	
04/25/72-08/31/75	FY75: \$21,712	TOTAL: \$147,712
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Manderscheid, L.	JSC/Forbes, C. D.	13-Physics
(72-680 652-01-82)	(72-960 948-63-82)	

NGL 23-004-083 Michigan State University **2456**
Use of remote sensing for land use policy formulation

<i>Period</i>	<i>Obligations</i>	
06/08/72-05/31/78	FY75: \$110,000	TOTAL: \$550,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Boylan, M. G.	HQ-P/Vitale, J. A.	39-Env Sci, NEC
(10-371 340-00-00)		

NGR 23-004-091 Michigan State University **2457**
A study of structure of a large angle oblique jet impingement flow

<i>Period</i>	<i>Obligations</i>	
11/01/73-10/31/75	FY75: \$22,041	TOTAL: \$40,041
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Foss, J. F.	LARC/Hardin, J. C.	41-Aero Engr
(23-702 505-03-12)	(23-704 501-04-01)	

**NASA'S UNIVERSITY PROGRAM
MICHIGAN (Continued)**

NSG 1138 Michigan State University **2458**
An experimental investigation of the initial condition effects on a turbulent shear layer
Period *Obligations*
01/01/75-12/31/76 FY75: \$4,000 TOTAL: \$4,000
Prin. Invest. NASA Tech. Officer CASE Category
Foss, J. F. LARC/Fischer, M. C. 41-Aero Engr
(23-702 505-11-11)

NSG 1148 Michigan State University **2459**
Development and application of an interferometric system for measuring crack displacements
Period *Obligations*
03/01/75-02/28/76 FY75: \$19,168 TOTAL: \$19,168
Prin. Invest. NASA Tech. Officer CASE Category
Sharpe, W. N. LARC/Elber, W. 47-Materials Engr
LARC/Leybold, H. A.
(23-702 505-02-31)

NAS 9-14195 Oakland University **2460**
Investigation of correlation classification techniques
Period *Obligations*
07/01/74-01/01/76 FY75: TOTAL: \$64,800
Prin. Invest. NASA Tech. Officer CASE Category
Haskell, R. E. JSC/Juday, R. D. 21-Mathematics
JSC/Trichel, M. C.
(72-680 177-32-81)

NAS 2-6057 University of Michigan - Ann Arbor **2461**
Vestibular research in space
Period *Obligations*
06/30/70-10/31/75 FY75: \$35,702 TOTAL: \$181,530
Prin. Invest. NASA Tech. Officer CASE Category
Von Baumgarten, R. J. ARC/Simmonds, R. C. 61-Biol Aspects
(21-970 970-21-61) (21-970 970-24-02)

NAS 3-19533 University of Michigan - Ann Arbor **2462**
Testing and comparative evaluations of three antenna systems
Period *Obligations*
02/14/75-07/31/75 FY75: \$14,059 TOTAL: \$14,059
Prin. Invest. NASA Tech. Officer CASE Category
Ferris, J. LERC/Wright, D. U. 42-Astro Engr
(22-620 610-22-00) (22-620 643-60-01)

NAS 5-11073 University of Michigan - Ann Arbor **2463**
Omegatron mass spectrometer system for the San Marco /C/ satellite
Period *Obligations*
06/30/67-01/31/76 FY75: \$25,803 TOTAL: \$724,101
Prin. Invest. NASA Tech. Officer CASE Category
Carignan, G. R. GSFC/Spencer, N. W. 13-Physics
(51-850 874-31-00) (51-850 894-12-00)

NAS 5-11128 University of Michigan - Ann Arbor **2464**
Two flight tests of a quadrupole mass spectrometer system
Period *Obligations*
06/06/69-07/31/75 FY75: \$41,557 TOTAL: \$443,080
Prin. Invest. NASA Tech. Officer CASE Category
Carignan, G. R. GSFC/Cooley, J. E. 31-Atmos Sci
GSFC/Niemann, H. B.
(51-840 185-47-52) (51-810 401-03-01)

NAS 5-11309 University of Michigan - Ann Arbor **2465**
AEROS A-2 neutral atmosphere temperature experiment
Period *Obligations*
06/30/70-08/15/75 FY75: \$30,677 TOTAL: \$725,069
Prin. Invest. NASA Tech. Officer CASE Category
Carignan, G. R. GSFC/Pelz, D. T. 11-Astronomy
Caldwell, J.
(51-850 874-32-00)

NAS 5-11376 University of Michigan - Ann Arbor **2466**
AE-C, D, & E Pelz experiment
Period *Obligations*
01/07/71-12/27/77 FY75: \$102,782 TOTAL: \$958,532
Prin. Invest. NASA Tech. Officer CASE Category
Carignan, G. R. GSFC/Pelz, D. T. 31-Atmos Sci
GSFC/Hedin, A. E.
(51-850 852-22-00) (51-830 490-01-04)

NAS 5-11380 University of Michigan - Ann Arbor **2467**
AE-C, D, and E neutral temperature experiment
Period *Obligations*
02/03/71-06/30/77 FY75: \$156,406 TOTAL: \$863,224
Prin. Invest. NASA Tech. Officer CASE Category
Cliff, R. A. GSFC/Sing, M. L. 31-Atmos Sci
Danchenko, V.
(51-850 852-21-00) (51-850 852-22-00) (51-840 185-47-52)

NAS 5-20622 University of Michigan - Ann Arbor **2468**
Nitric oxide detector
Period *Obligations*
06/18/74-01/01/76 FY75: \$102,992 TOTAL: \$162,992
Prin. Invest. NASA Tech. Officer CASE Category
Horvath, J. J. GSFC/Wright, D. U. 31-Atmos Sci
Mason, C. J. GSFC/Theon, J. S.
(51-680 175-61-41) (51-680 607-12-00) (51-850 879-11-00)

NAS 5-20806 University of Michigan - Ann Arbor **2469**
Breadboard design and component layout of Pioneer-Venus electron temperature probe signal processor
Period *Obligations*
12/13/74-09/30/75 FY75: \$81,178 TOTAL: \$81,178
Prin. Invest. NASA Tech. Officer CASE Category
Brace, L. H. GSFC/Krehbiel, J. P. 31-Atmos Sci
(51-840 186-68-63)

NAS 5-20839 University of Michigan - Ann Arbor **2470**
Data reduction and analysis of IMP I radio astronomy experiment
Period *Obligations*
02/19/75-01/31/76 FY75: \$29,964 TOTAL: \$29,964
Prin. Invest. NASA Tech. Officer CASE Category
Haddock, F. T. GSFC/Davis, M. A. 13-Physics
(51-850 861-52-00)

NAS 5-20939 University of Michigan - Ann Arbor **2471**
Laboratory tests and development of mass spectrometer sub-systems
Period *Obligations*
02/13/75-05/01/76 FY75: \$50,000 TOTAL: \$50,000
Prin. Invest. NASA Tech. Officer CASE Category
Unavailable GSFC/Unavailable 13-Physics
(51-840 185-47-54)

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NAS 5-22441 University of Michigan - Ann Arbor 2472
Stratospheric physics and chemistry workshop

<i>Period</i>	<i>Obligations</i>	
05/15/75-08/30/75	FY75: \$19,953	TOTAL: \$19,953
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Carignan, G. R. (51-840 185-47-52)	GSFC/Spencer, N. W. (51-840 185-47-53)	19-Phys Sci, NEC (51-850 385-45-00)

NAS 5-23006 University of Michigan - Ann Arbor 2473
Atmosphere Explorer visual airglow photometer

<i>Period</i>	<i>Obligations</i>	
08/24/71-06/30/77	FY75: \$145,000	TOTAL: \$984,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hays, P. B. Shepherd, G. G. (51-850 852-22-00)	GSFC/Findlay, J. A.	31-Atmos Sci

NAS 5-23230 University of Michigan - Ann Arbor 2474
Program of aeronautical research utilizing thermosphere probe

<i>Period</i>	<i>Obligations</i>	
06/18/73-06/18/76	FY75: \$75,000	TOTAL: \$261,927
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Carignan, G. R. (51-850 879-11-00)	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-23267 University of Michigan - Ann Arbor 2475
Pulse circuitry for application to spark chambers

<i>Period</i>	<i>Obligations</i>	
06/21/73-09/13/75	FY75: \$11,330	TOTAL: \$28,684
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ponnamperuma, C. A. (51-850 188-46-57)	GSFC/Ross, R. W.	45-Elec Engr

NAS 5-23310 University of Michigan - Ann Arbor 2476
Lower atmosphere composition experiment

<i>Period</i>	<i>Obligations</i>	
10/29/73-09/30/74	FY75: \$4,000	TOTAL: \$101,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Carignan, G. R. (51-840 186-68-63)	GSFC/Spencer, N. W.	11-Astronomy

NAS 8-28294 University of Michigan - Ann Arbor 2477
Potential environment problems relative to the space shuttle operations

<i>Period</i>	<i>Obligations</i>	
04/06/72-01/05/74	FY75:	TOTAL: \$99,958
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cicerone, R. J. (62-980 909-52-47)	MSFC/Devries, L. L. MSFC/Kaufman, J. W.	13-Physics

NAS 8-30625 University of Michigan - Ann Arbor 2478
Environmental impact of OSS launch vehicle and propulsion programs

<i>Period</i>	<i>Obligations</i>	
05/01/74-12/31/74	FY75:	TOTAL: \$25,250
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stedman, D. H. Nelson, A. (62-830 180-70-50)	MSFC/Devries, L. L. MSFC/Stephens, J. B.	31-Atmos Sci

NAS 8-31397 University of Michigan - Ann Arbor 2479
Definition of lidar requirements and plasma wake and sheath experiments for the AMPS laboratory

<i>Period</i>	<i>Obligations</i>	
03/11/75-09/11/75	FY75: \$49,781	TOTAL: \$49,781
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nagy, A. F. Samir, U. (62-850 356-36-03)	MSFC/Roberts, W. T. MSFC/Chappell, C. R.	19-Phys Sci, NEC

NAS 9-14609 University of Michigan - Ann Arbor 2480
Development of an instrument payload for balloon rocket or aircraft

<i>Period</i>	<i>Obligations</i>	
05/01/75-10/30/77	FY75: \$150,000	TOTAL: \$150,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Anderson, J. G. (72-920 989-15-00)	JSC/Koons, F. D.	31-Atmos Sci

NGL 23-005-005 University of Michigan - Ann Arbor 2481
Research on heat resistant alloys for use in supersonic aircrafts

<i>Period</i>	<i>Obligations</i>	
12/15/60-07/01/75	FY75:	TOTAL: \$597,986
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wilson, D. J. (10-740 129-00-00)	LERC/Freche, J. C. LERC/Harf, F. H.	47-Materials Engr (22-760 720-00-00)

NGL 23-005-010 University of Michigan - Ann Arbor 2482
Structural analysis of aircraft tires

<i>Period</i>	<i>Obligations</i>	
01/02/63-12/31/75	FY75:	TOTAL: \$357,731
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Clark, S. R. (23-742 124-00-00)	LARC/McCarty, J. L.	41-Aero Engr (23-760 126-00-00) (23-763 133-00-00)

NGL 23-005-275 University of Michigan - Ann Arbor 2483
Solar research program of McMath-Hulbert Observatory and improvement of photoheliographic telescope

<i>Period</i>	<i>Obligations</i>	
04/08/68-09/30/75	FY75: \$40,000	TOTAL: \$485,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Mohler, O. C. (10-850 188-38-52)	HQ-SG/Jordan, S. D. HQ-SG/Timothy, A. F.	11-Astronomy (10-850 188-00-00)

NGL 23-005-336 University of Michigan - Ann Arbor 2484
Two phase detonation as related to rocket motor combustion instability

<i>Period</i>	<i>Obligations</i>	
04/11/69-01/01/75	FY75:	TOTAL: \$342,340
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nicholls, J. A. (22-710 128-00-00)	LERC/Priem, R. J.	46-Mech Engr

NGR 23-005-015 University of Michigan - Ann Arbor 2485
Theoretical investigation of space charge waves in ionosphere and space plasma sheaths

<i>Period</i>	<i>Obligations</i>	
10/28/63-06/30/76	FY75: \$120,000	TOTAL: \$1,012,805
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nagy, A. F. (10-850 385-36-00)	HQ-SG/Cauffman, D. P. HQ-SG/Schmerling, E. R.	31-Atmos Sci (10-850 188-36-56)

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NGR 23-005-094 University of Michigan - Ann Arbor **2486**
An investigation of plasma kinetics, with emphasis on the interaction between rarefied plasmas and moving bodies

<i>Period</i>	<i>Obligations</i>	
06/26/64-04/30/76	FY75: \$31,807	TOTAL: \$316,035
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Liu, V. C.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

(10-840 185-47-81) (10-840 185-00-00)

NGR 23-005-185 University of Michigan - Ann Arbor **2487**
Application of new bioelectronics to cardiovascular stresses

<i>Period</i>	<i>Obligations</i>	
05/13/66-09/30/73	FY75: \$234,736	TOTAL: \$234,736
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
French, J. R., Jr.	HQ-JG/Arnoldi, L. B.	53-Other Medical
Campbell, D.	HQ-JG/Mockbee, J. C.	
Vickers, R.		

(10-030 010-00-00)

NGR 23-005-320 University of Michigan - Ann Arbor **2488**
Theoretical and experimental studies of spacecraft space plasma interactions

<i>Period</i>	<i>Obligations</i>	
01/29/69-07/31/75	FY75: \$45,000	TOTAL: \$297,557
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Samir, U.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Schmerling, E. R.	

(10-850 188-36-56)

NGR 23-005-360 University of Michigan - Ann Arbor **2489**
A program in aeronomy

<i>Period</i>	<i>Obligations</i>	
12/29/69-06/30/75	FY75: \$150,000	TOTAL: \$878,101
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sharp, W. E.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Ott, E. J.	

(10-850 385-36-00) (10-850 879-11-00)

NGR 23-005-464 University of Michigan - Ann Arbor **2490**
Optical studies of galactic X-ray sources

<i>Period</i>	<i>Obligations</i>	
03/02/71-02/29/76	FY75: \$17,300	TOTAL: \$73,283
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hiltner, W. A.	HQ-SG/Rosendhal, J. D.	11-Astronomy
	HQ-SG/Roman, N. G.	

(10-850 385-41-00)

NGR 23-005-523 University of Michigan - Ann Arbor **2491**
Study of flow near the foot of a weak shock terminating a region of supersonic flow

<i>Period</i>	<i>Obligations</i>	
04/20/72-04/30/76	FY75: \$50,291	TOTAL: \$138,469
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sichel, M.	LARC/Czarnecki, K. R.	41-Aero Engr
Adamson, T. C., Jr.		
Messiter, A. F.		

(23-702 505-06-31) (23-704 501-06-05)

NGR 23-005-528 University of Michigan - Ann Arbor **2492**
Fiber-reinforced solids possessing great fracture toughness & the role of interfacial strength

<i>Period</i>	<i>Obligations</i>	
07/26/72-07/31/76	FY75: \$21,282	TOTAL: \$50,661
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Felbeck, D. K.	LARC/Fichter, W. B.	47-Materials Engr

(23-702 505-02-31)

NGR 23-005-536 University of Michigan - Ann Arbor **2493**
Research in ignition of metals, lubricants, and contaminants in oxygen-rich atmospheres

<i>Period</i>	<i>Obligations</i>	
07/01/72-12/31/75	FY75: \$25,001	TOTAL: \$95,401
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nicholls, J. A.	LERC/Haggard, J. B., Jr.	42-Astro Engr
Adamson, T. C., Jr.		

(22-704 502-28-04) (22-704 506-21-54)

NGR 23-005-537 University of Michigan - Ann Arbor **2494**
Application of Mossbauer spectroscopy to the determination of source material and thermal histories of tektites

<i>Period</i>	<i>Obligations</i>	
06/23/72-05/31/75	FY75:	TOTAL: \$45,494
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Evans, B. J.	HQ-SM/Bryson, R. P.	32-Geological Sci

(10-810 195-42-67) (10-810 195-00-00)

NGR 23-005-540 University of Michigan - Ann Arbor **2495**
Experimental and theoretical study of sound from meteors

<i>Period</i>	<i>Obligations</i>	
01/07/72-03/31/76	FY75:	TOTAL: \$69,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bartman, F. L.	HQ-SG/Dubin, M.	31-Atmos Sci
Revelle, D. O.	HQ-SM/Roberson, F. I.	

(10-850 188-45-52) (10-850 188-00-00)

NGR 23-005-543 University of Michigan - Ann Arbor **2496**
Basic research in solar physics

<i>Period</i>	<i>Obligations</i>	
11/17/72-12/31/74	FY75:	TOTAL: \$15,664
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Teske, R. G.	HQ-SG/Weldon, J. M.	11-Astronomy

(10-850 188-00-00)

NGR 23-005-561 University of Michigan - Ann Arbor **2497**
OGO-VI data analysis

<i>Period</i>	<i>Obligations</i>	
08/07/72-09/30/74	FY75:	TOTAL: \$78,307
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Carignan, G. R.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

(10-840 384-47-81) (10-840 384-00-00)

NGR 23-005-563 University of Michigan - Ann Arbor **2498**
Studies on the polar CO2 ice caps of Mars

<i>Period</i>	<i>Obligations</i>	
06/23/72-08/31/74	FY75:	TOTAL: \$32,186
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Smith, C. I.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Allingham, J. W.	

(10-840 384-50-80) (10-840 185-00-00)

**NASA'S UNIVERSITY PROGRAM
MICHIGAN (Continued)**

NGR 23-005-603 University of Michigan - Ann Arbor **2499**
Wear of multiphase materials

<i>Period</i>	<i>Obligations</i>	
09/15/73-03/14/75	FY75: TOTAL: \$16,800	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ludema, K. C.	LERC/Buckley, D.H.	47-Materials Engr
	LERC/Johnson, R. L.	
(22-704 501-15-83)		

NGR 23-005-616 University of Michigan - Ann Arbor **2500**
Photochemistry of the upper atmosphere

<i>Period</i>	<i>Obligations</i>	
01/01/74-09/30/75	FY75: \$44,900 TOTAL: \$74,460	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cicerone, R. J.	JSC/Hudson, R. D.	31-Atmos Sci
	JSC/Robbins, D. E.	
(72-920 989-15-00) (72-704 502-24-82)		

NGR 23-005-617 University of Michigan - Ann Arbor **2501**
Computer programs for the calculation of atmospheric infrared transmittance

<i>Period</i>	<i>Obligations</i>	
11/12/73-07/31/75	FY75: TOTAL: \$26,166	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Drayson, S. R.	LARC/Reichle, H. G., Jr.	31-Atmos Sci
(23-680 160-44-64)		

NSG 1003 University of Michigan - Ann Arbor **2502**
Measurement of ozone transmissivity at low temperature

<i>Period</i>	<i>Obligations</i>	
03/01/74-05/31/75	FY75: TOTAL: \$39,322	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Drayson, S. R.	LARC/Russell, J. M., III	31-Atmos Sci
Kuhn, W. R.	LARC/Davis, R. E.	
Chaney, L. W.		
(23-680 176-21-31)		

NSG 1080 University of Michigan - Ann Arbor **2503**
Definition of tire properties for landing system analyses

<i>Period</i>	<i>Obligations</i>	
09/01/74-08/31/75	FY75: TOTAL: \$38,462	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Clark, S. K.	LARC/McCarty, J. L.	41-Aero Engr
(23-763 133-00-00)		

NSG 1176 University of Michigan - Ann Arbor **2504**
Comparative analyses of genetic algorithms in relation to other multimodal function optimization techniques

<i>Period</i>	<i>Obligations</i>	
05/01/75-04/30/76	FY75: \$15,000 TOTAL: \$15,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Holland, J. H.	LARC/Straeter, T. A.	21-Mathematics
	LARC/Hogge, J. E.	
(23-704 506-90-21)		

NSG 2018 University of Michigan - Ann Arbor **2505**
Graduate research in aeronautics program

<i>Period</i>	<i>Obligations</i>	
04/01/74-04/01/76	FY75: \$72,200 TOTAL: \$131,762	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kroeger, R. A.	ARC/Feistel, T. W.	41-Aero Engr
	ARC/Maki, R. L.	
(21-702 505-10-12) (21-702 760-60-01)		

NSG 2056 University of Michigan - Ann Arbor **2506**
Interactive computer graphics study

<i>Period</i>	<i>Obligations</i>	
01/01/75-11/31/75	FY75: \$15,000 TOTAL: \$15,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kroeger, R. A.	ARC/Galloway, T. L.	41-Aero Engr
Phillips, R. L.	ARC/Schairer, E. T.	
Smith, M. R.		
(21-701 791-40-03)		

NSG 5044 University of Michigan - Ann Arbor **2507**
Investigations of electromagnetic scattering by columnar ice crystals

<i>Period</i>	<i>Obligations</i>	
01/01/75-12/31/75	FY75: \$28,808 TOTAL: \$28,808	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Weil, H.	GSFC/Curran, R. J.	31-Atmos Sci
Senior, T. B.	GSFC/Fraser, R. S.	
(51-680 175-11-42)		

NSG 7004 University of Michigan - Ann Arbor **2508**
Analysis of IMP-6 solar radio burst

<i>Period</i>	<i>Obligations</i>	
11/01/73-10/31/75	FY75: \$90,000 TOTAL: \$178,703	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Haddock, F. T.	HQ-SG/Timothy, A. F.	13-Physics
(10-850 385-38-00)		

NSG 7137 University of Michigan - Ann Arbor **2509**
Analysis of OGO-6 photometer

<i>Period</i>	<i>Obligations</i>	
01/01/75-01/31/76	FY75: \$12,762 TOTAL: \$12,762	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Donahue, T. M.	HQ-SG/Ubin, M. D.	11-Astronomy
	HQ-SG/Schmerling, E. R.	
(10-850 385-45-00)		

NSG 9031 University of Michigan - Ann Arbor **2510**
Study of atom-radical reaction system capable of providing in-situ measurements of NO₂, HO₂, C₁₀ and BrO

<i>Period</i>	<i>Obligations</i>	
06/15/75-06/14/76	FY75: \$38,774 TOTAL: \$38,774	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Anderson, J. G.	JSC/St Stanley, J. F.	31-Atmos Sci
(72-840 185-47-32) (72-920 989-15-00)		

NSR 23-005-376 University of Michigan - Ann Arbor **2511**
High altitude radiation measurements

<i>Period</i>	<i>Obligations</i>	
05/04/70-05/30/74	FY75: TOTAL: \$452,673	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bartman, F. L.	GSFC/Wexler, R.	31-Atmos Sci
Kuhn, W. R.		
Chaney, L. W.		
(51-680 160-00-00)		

S-54214A University of Michigan - Ann Arbor **2512**
Feasibility study of Doppler signature detection of incipient tornadoes

<i>Period</i>	<i>Obligations</i>	
05/21/75-11/21/75	FY75: \$5,000 TOTAL: \$5,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	GSFC/Unavailable	31-Atmos Sci
(51-680 175-21-45)		

**NASA'S UNIVERSITY PROGRAM
MICHIGAN (Continued)**

NAS 8-29823 Wayne State University 2513
Electrophoretic separation of proteins in space
Period *Obligations*
05/15/73-09/15/75 FY75: TOTAL: \$75,880
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Brown, R. K. MSFC/Allen, R. E. 47-Materials Engr
MSFC/Nerren, B. H.
(62-630 162-01-02)

NGR 23-006-057 Wayne State University 2514
Study of effects of guard ring structures of excess junction current
in silicon solar cells
Period *Obligations*
03/10/72-03/31/75 FY75: TOTAL: \$26,814
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wang, E. Y. LERC/Brandhorst, H. W., Jr. 45-Elec Engr
(22-704 502-05-50)

NGR 23-006-063 Wayne State University 2515
NASA/WSU internship laser power solar cell research
Period *Obligations*
04/10/73-09/27/75 FY75: TOTAL: \$21,200
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wang, E. Y. LERC/Dunning, J. W., Jr. 45-Elec Engr
Yu, F. T. LERC/Brandhorst, H. W., Jr.
(22-704 502-05-50)

NSG 2008 Wayne State University 2516
Mathematical models of in vivo measurement of human ulnar
strength
Period *Obligations*
02/01/74-06/30/76 FY75: \$20,000 TOTAL: \$38,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sawyer, J. O. ARC/Young, D. R. 53-Other Medical
(21-970 970-21-14) (21-970 970-21-17)

NSG 3014 Wayne State University 2517
Solar energy research
Period *Obligations*
06/19/74-12/18/75 FY75: TOTAL: \$11,060
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wang, E. Y. LERC/Brandhorst, H. W., Jr. 13-Physics
LERC/Bernatowicz, D. T.
(22-704 502-05-50)

NSG 3035 Wayne State University 2518
Laser power research
Period *Obligations*
09/03/74-03/02/76 FY75: \$11,060 TOTAL: \$11,060
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Yu, F. T. LERC/Dunning, J. W., Jr. 45-Elec Engr
(22-704 502-11-01)

MINNESOTA

NAS 1-9697 Univ of Minnesota - Minneapolis-St Paul 2519
Participation in the science planning for the Viking 1975 missions
in the area of entry science
Period *Obligations*
03/20/70-03/31/77 FY75: \$48,043 TOTAL: \$338,562
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Nier, A. O. LARC/Williams, T. S., Jr. 99-Multi-Discip
LARC/Glenny, W. R.
(23-840 815-20-00)

NAS 1-11676 Univ of Minnesota - Minneapolis-St Paul 2520
Fabrication, testing, and calibration of flight mass spectrometers
for dual air density project
Period *Obligations*
06/16/72-08/26/75 FY75: \$143,961 TOTAL: \$649,692
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Nier, A. O. LARC/Beswick, A. G. 31-Atmos Sci
Mauersberger, K. LARC/Prior, E. J.
(23-850 863-11-00) (23-850 863-00-00)

NAS 1-13712 Univ of Minnesota - Minneapolis-St Paul 2521
Data analysis for dual air density satellites
Period *Obligations*
12/16/74-09/15/77 FY75: \$33,000 TOTAL: \$33,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mauersberger, K. LARC/Keating, G. M. 31-Atmos Sci
Nier, A. O. LARC/Lee, R. B., III
(23-850 863-11-00)

NAS 2-7900 Univ of Minnesota - Minneapolis-St Paul 2522
Design and development of a neutral mass spectrometer
Period *Obligations*
10/01/73-03/31/75 FY75: TOTAL: \$20,666
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Von Zahn, U. ARC/Polaski, L. J. 31-Atmos Sci
Nier, A. O. ARC/Hall, C. F.
Mauersberger, K.
(21-840 186-68-63)

NAS 2-8812 Univ of Minnesota - Minneapolis-St Paul 2523
Design and development of the bus neutral mass spectrometer
Period *Obligations*
06/17/75-08/31/78 FY75: \$3,000 TOTAL: \$3,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Nier, A. O. ARC/Thorley, G. W. 31-Atmos Sci
Mauersberger, K. ARC/Sperans, J.
(21-840 825-20-00)

NAS 5-3838 Univ of Minnesota - Minneapolis-St Paul 2524
Zodiacal light experiment
Period *Obligations*
06/25/64-12/31/75 FY75: \$15,000 TOTAL: \$504,581
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Epney, O. GSFC/Staff, W. O. 13-Physics
(51-850 385-45-00) (51-850 821-22-00)

**NASA'S UNIVERSITY PROGRAM
MINNESOTA (Continued)**

NAS 5-11173 Univ of Minnesota - Minneapolis-St Paul 2525
Magnetic fields experiment for S3

<i>Period</i>	<i>Obligations</i>	
10/22/68-03/31/76	FY75: \$49,280	TOTAL: \$440,280
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cahill, L. J., Jr.	GSFC/Sizemore, K. O.	49-Engr, NEC
(61-850 857-12-00)		

NAS 5-11310 Univ of Minnesota - Minneapolis-St Paul 2526
Ac electric fields experiment Helios

<i>Period</i>	<i>Obligations</i>	
06/29/70-02/01/79	FY75: \$128,000	TOTAL: \$1,089,555
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kellogg, P. J.	GSFC/White, C. E.	11-Astronomy
Hameremesh, M.		
(51-840 823-12-00)		

NAS 5-11438 Univ of Minnesota - Minneapolis-St Paul 2527
Open source neutral mass spectrometers for AE spacecraft, missions C, D, & E

<i>Period</i>	<i>Obligations</i>	
06/15/71-11/15/77	FY75: \$140,000	TOTAL: \$892,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nier, A. O.	GSFC/Findlay, J. A.	31-Atmos Sci
(51-850 852-22-00)		

NAS 5-11687 Univ of Minnesota - Minneapolis-St Paul 2528
Study of particle acceleration mechanisms for the ATS-F

<i>Period</i>	<i>Obligations</i>	
05/21/69-05/30/76	FY75: \$93,000	TOTAL: \$667,683
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Winckler, J. R.	GSFC/Wainscott, F. H.	49-Engr, NEC
(51-620 646-22-00)	(51-850 385-36-00)	

NAS 5-20837 Univ of Minnesota - Minneapolis-St Paul 2529
Data reduction and analysis of electro-magnetic field of IMP I

<i>Period</i>	<i>Obligations</i>	
02/20/75-12/31/75	FY75: \$60,000	TOTAL: \$60,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kellogg, P. J.	GSFC/Davis, M. A.	13-Physics
(51-850 861-52-00)		

NAS 8-27977 Univ of Minnesota - Minneapolis-St Paul 2530
Design, development, & operation of Cerenkov portion of the ACR-7 heavy nuclei experiment under the HEAO program

<i>Period</i>	<i>Obligations</i>	
06/16/72-02/15/78	FY75: \$75,000	TOTAL: \$350,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Waddington, C. J.	MSFC/Krome, H. O.	11-Astronomy
	MSFC/Cochran, J.	
(62-850 832-12-00)	(62-850 832-00-00)	

NAS 8-31510 Univ of Minnesota - Minneapolis-St Paul 2531
Study of electron accelerator experiments using subsatellites as detectors

<i>Period</i>	<i>Obligations</i>	
07/01/75-06/30/76	FY75: \$25,015	TOTAL: \$25,015
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Winckler, J. R.	MSFC/Roberts, W. T.	13-Physics
Hendrickson, R.	MSFC/Chappell, C. R.	
(62-850 356-36-03)		

NAS 9-12560 Univ of Minnesota - Minneapolis-St Paul 2532
Storage stability & improvement of intermediate moisture foods

<i>Period</i>	<i>Obligations</i>	
03/23/72-03/17/77	FY75: \$55,000	TOTAL: \$155,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Labuza, T. P.	JSC/Smith, M. C., Jr.	59-Life Sci, NEC
(72-970 970-52-24)		

NGL 24-005-008 Univ of Minnesota - Minneapolis-St Paul 2533
Analytic and experimental research in space physics including balloon and rocket flight experiments

<i>Period</i>	<i>Obligations</i>	
08/20/62-02/01/76	FY75:	TOTAL: \$4,196,132
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Winckler, J. R.	HQ-SG/Cauffman, D. P.	13-Physics
	HQ-SG/Roman, N. G.	
(10-850 188-36-55)	(10-850 188-41-55)	(10-850 188-00-00)

NGL 24-005-009 Univ of Minnesota - Minneapolis-St Paul 2534
Development and application of mass spectrometers to studies of earths upper atmosphere and planetary atmospheres

<i>Period</i>	<i>Obligations</i>	
08/01/62-06/30/77	FY75: \$110,288	TOTAL: \$1,285,477
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nier, A. O.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	
(10-840 185-47-80)	(10-840 185-00-00)	

NGL 24-005-160 Univ of Minnesota - Minneapolis-St Paul 2535
Investigation of environmental microbiology as related to planetary quarantine

<i>Period</i>	<i>Obligations</i>	
06/13/68-05/31/76	FY75:	TOTAL: \$1,225,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Straub, C. P.	HQ-SL/Hall, L. B.	51-Biology
	HQ-SL/Gallagher, S. G.	
(10-870 189-00-00)	(10-870 191-00-00)	

NGL 24-005-225 Univ of Minnesota - Minneapolis-St Paul 2536
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
01/26/71-01/31/78	FY75: \$102,743	TOTAL: \$483,403
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Pepin, R. O.	JSC/Harris, J. W.	13-Physics
(72-810 388-10-02)		

NGL 24-005-263 Univ of Minnesota - Minneapolis-St Paul 2537
Study of Minnesota forests and lakes using data from earth resources technology satellites

<i>Period</i>	<i>Obligations</i>	
07/06/72-06/30/77	FY75: \$70,000	TOTAL: \$220,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cahill, L. J., Jr.	HQ-P/Vitale, J. A.	39-Env Sci, NEC
(10-371 340-00-00)		

NGR 24-005-050 Univ of Minnesota - Minneapolis-St Paul 2538
Measurement of the gamma ray flux of various celestial point sources from high altitude balloons

<i>Period</i>	<i>Obligations</i>	
04/21/65-06/30/76	FY75: \$60,000	TOTAL: \$607,887
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Waddington, C. J.	HQ-SG/Lazarus, A. J.	11-Astronomy
Freier, P. S.	HQ-SG/Opp, A. G.	
(10-850 188-46-56)	(10-850 188-46-54)	

**NASA'S UNIVERSITY PROGRAM
MINNESOTA (Continued)**

NGR 24-005-111 Univ of Minnesota - Minneapolis-St Paul 2539
Electron radar techniques as a probe of the trapped radiation belts

<i>Period</i>	<i>Obligations</i>	
09/29/66-09/14/74	FY75: TOTAL: \$529,591	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Winckler, J. R.	HQ-SG/Kavanagh, L. D., Jr.	13-Physics
(10-850 879-11-00)	(10-850 879-00-00)	

NGR 24-005-196 Univ of Minnesota - Minneapolis-St Paul 2540
Studying the neutral constituents of the polar atmospheres above 100 km during calendar year 1970

<i>Period</i>	<i>Obligations</i>	
03/16/70-12/31/75	FY75: \$61,500 TOTAL: \$271,500	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nier, A. O.	HQ-SG/Dubin, M.	31-Atmos Sci
(10-850 879-00-00)	HQ-SG/Ott, E. J.	

NGR 24-005-223 Univ of Minnesota - Minneapolis-St Paul 2541
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
05/22/71-01/31/76	FY75: \$86,425 TOTAL: \$320,175	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Murthy, V. R.	JSC/Harris, J. W.	13-Physics
(72-810 388-10-02)		

NGR 24-005-248 Univ of Minnesota - Minneapolis-St Paul 2542
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
08/03/71-01/31/76	FY75: \$63,000 TOTAL: \$250,145	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Banerjee, S. K.	JSC/Harris, J. W.	32-Geological Sci
(72-810 388-10-03)		

NGR 24-005-253 Univ of Minnesota - Minneapolis-St Paul 2543
Particle and field studies of the magnetosphere

<i>Period</i>	<i>Obligations</i>	
11/01/71-12/31/75	FY75: \$92,000 TOTAL: \$400,186	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cahill, L. J., Jr.	HQ-SG/Kavanagh, L. D., Jr.	13-Physics
(10-850 879-11-00)	HQ-SG/Ott, E. J.	

NGR 24-005-267 Univ of Minnesota - Minneapolis-St Paul 2544
Photometric investigation of wavelength dependence of radiation from objects, showing excess long wave radiation (10 to 30 microns)

<i>Period</i>	<i>Obligations</i>	
02/26/73-12/31/75	FY75: TOTAL: \$49,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ney, E. P.	ARC/Cameron, R. M.	11-Astronomy
(21-850 352-02-03)	(21-850 352-00-00)	

NGR 24-005-275 Univ of Minnesota - Minneapolis-St Paul 2545
Iodine 129 as a possible factor in prebiotic synthesis of biopolymers

<i>Period</i>	<i>Obligations</i>	
04/25/73-06/30/74	FY75: TOTAL: \$4,008	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Swain, F. M.	HQ-SL/Geib, D. S.	12-Chemistry
(10-840 192-55-61)		

NGT 24-005-078 Univ of Minnesota - Minneapolis-St Paul 2546
Training of predoctoral graduate students in space sciences and technology

<i>Period</i>	<i>Obligations</i>	
06/24/65-08/01/78	FY75: TOTAL: \$18,298	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Anderson, G. W.	HQ-P/Carter, C. H.	99-Multi-Discip
(10-370 181-00-00)		

NSG 2014 Univ of Minnesota - Minneapolis-St Paul 2547
Exploratory astrophysics and infrared astronomy

<i>Period</i>	<i>Obligations</i>	
02/01/74-02/01/76	FY75: TOTAL: \$80,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ney, E. P.	ARC/Cameron, R. M.	11-Astronomy
(21-850 352-02-03)		

NSG 3041 Univ of Minnesota - Minneapolis-St Paul 2548
Ion beam sputter etch and deposition study

<i>Period</i>	<i>Obligations</i>	
01/01/75-01/01/76	FY75: \$49,386 TOTAL: \$49,386	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wehner, G. K.	LARC/Weigand, A. J.	13-Physics
Judy, J. H.	LARC/Banks, B. A.	
(22-704 506-22-40)		

NSG 7005 Univ of Minnesota - Minneapolis-St Paul 2549
Energetic particles in the magnetosphere and space

<i>Period</i>	<i>Obligations</i>	
07/01/73-06/30/77	FY75: \$240,000 TOTAL: \$420,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Winckler, J. R.	HQ-SG/Kavanagh, L. D., Jr.	13-Physics
(10-850 188-36-55)	HQ-SG/Ott, E. J.	
	(10-850 879-11-00)	

NSG 7108 Univ of Minnesota - Minneapolis-St Paul 2550
Research of waves and fields in plasma

<i>Period</i>	<i>Obligations</i>	
12/01/74-11/30/75	FY75: \$30,000 TOTAL: \$30,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kellogg, P. J.	HQ-SG/Berko, F. W.	19-Phys Sci, NEC
(10-850 188-36-55)	HQ-SG/Schmerling, E. R.	

NSR 24-005-238 Univ of Minnesota - Minneapolis-St Paul 2551
Development of a photometer system for use with the 91 cm IR telescope

<i>Period</i>	<i>Obligations</i>	
06/13/72-12/31/74	FY75: TOTAL: \$60,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ney, E. P.	ARC/Cameron, R. M.	11-Astronomy
(10-850 352-00-00)	ARC/Bader, M.	

NSR 24-005-245 Univ of Minnesota - Minneapolis-St Paul 2552
Study of the proper motion of stars using the automated proper motion system

<i>Period</i>	<i>Obligations</i>	
01/13/72-11/30/74	FY75: TOTAL: \$224,077	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Luyten, W. J.	HQ-SG/Roman, N. G.	11-Astronomy
(10-850 188-00-00)	GSFC/Mead, J. M.	

**NASA'S UNIVERSITY PROGRAM
MISSISSIPPI**

MISSISSIPPI

NGR 25-012-001 **Alcorn State University** **2553**
 Radio tracking of geostationary satellites
Period *Obligations*
 09/01/73-12/31/75 **FY75: \$38,927** **TOTAL: \$80,475**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Paul, M. P. GSFC/Schmid, P. E. 31-Atmos Sci
 GSFC/Marini, J. W.
 (51-371 340-00-00)

NSG 8005 **Alcorn State University** **2554**
 Bio-degradation of rocket propellant waste (ammonium perchlorate)
Period *Obligations*
 04/01/74-06/01/76 **FY75: \$22,877** **TOTAL: \$43,395**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Naqvi, S. M. NSTL/Wolverton, B. C. 39-Env Sci, NEC
 Latif, A. MSFC/Kent, M. I.
 (62-371 340-00-00)

NGR 25-011-001 **Jackson State College** **2555**
 Research in marshland ecology
Period *Obligations*
 05/12/72-09/30/74 **FY75:** **TOTAL: \$37,097**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Nelson, F. R. HQ-P/Pohly, J. G. 51-Biology
 (10-371 340-00-00)

NGR 25-011-005 **Jackson State College** **2556**
 Establishment of an analytical model for natural water system
Period *Obligations*
 11/01/73-11/01/74 **FY75:** **TOTAL: \$20,933**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Sekhon, B. S. MSFC/Wolverton, B. C. 39-Env Sci, NEC
 MSFC/Kent, M. I.
 (62-371 340-00-00)

NSG 3004 **Jackson State College** **2557**
 Numerical solution of Navier-Stokes equations for steady laminar incompressible flow between two plates with abrupt change of spacings
Period *Obligations*
 03/01/74-05/31/76 **FY75: \$21,923** **TOTAL: \$43,443**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Chu, C. S. LERC/Zuk, J. 49-Engr, NEC
 (22-371 340-00-00)

NSG 8015 **Jackson State College** **2558**
 Study aquatic plants as filtration systems for photographic waste
Period *Obligations*
 06/03/74-06/02/75 **FY75:** **TOTAL: \$24,919**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Perkins, J. MSFC/Wolverton, B. C. 39-Env Sci, NEC
 MSFC/Kent, M. I.
 (62-371 340-00-00)

NSG 8023 **Jackson State College** **2559**
 Establishment of an analytical model for natural water systems
Period *Obligations*
 11/01/74-11/01/75 **FY75: \$23,061** **TOTAL: \$23,061**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Sekhon, B. S. NSTL/Wolverton, B. C. 39-Env Sci, NEC
 MSFC/Kent, M. I.
 (62-371 340-00-00)

NSG 8026 **Jackson State College** **2560**
 Aquatic plants as filtration systems for chlorinated hydrocarbons
Period *Obligations*
 06/01/75-06/01/76 **FY75: \$24,335** **TOTAL: \$24,335**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Shore, F. NSTL/Wolverton, B. C. 39-Env Sci, NEC
 MSFC/Kent, M. I.
 (62-371 340-00-00)

NSG 9016 **Jackson State College** **2561**
 Research in marshland ecology
Period *Obligations*
 08/15/74-05/31/76 **FY75: \$28,012** **TOTAL: \$28,012**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Nelson, F. R. NSTL/Joyce, A. T. 39-Env Sci, NEC
 (72-371 340-00-00)

NAS 8-26749 **Mississippi State University** **2562**
 A study of trends and techniques for space base electronics
Period *Obligations*
 01/12/71-01/11/76 **FY75: \$25,000** **TOTAL: \$90,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Gassaway, J. D. MSFC/Hollis, B. R., Jr. 13-Physics
 MSFC/Kennedy, B. W.
 (62-704 502-23-51) (62-750 115-00-00)

NAS 8-29036 **Mississippi State University** **2563**
 Application of Saturn/Apollo automated data system capabilities to problems of environmental impacts of urban transportation
Period *Obligations*
 06/16/72-12/17/73 **FY75:** **TOTAL: \$5,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 McKee, J. C., Jr. MSFC/McDonough, G. F. 39-Env Sci, NEC
 MSFC/Daniels, J. L., Jr.
 (62-910 933-00-00)

NAS 8-30618 **Mississippi State University** **2564**
 Fabrication of thermo-plastic hologram storage devices
Period *Obligations*
 03/15/74-12/15/75 **FY75: \$1,300** **TOTAL: \$16,300**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Rogers, T. W. MSFC/Pitts, E. H. 45-Elec Engr
 (62-680 177-32-71)

NASA'S UNIVERSITY PROGRAM
MISSISSIPPI (Continued)

NAS 8-30623 **Mississippi State University** **2565**
 Application of remote sensing to the identification of archaeological and potential recreational sites along the Tennessee-Tombigbee waterway route
Period *Obligations*
 04/01/74-10/01/74 **FY75:** **TOTAL: \$10,150**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Miller, W. F. MSFC/Daniels, J. L., Jr. 39-Env Sci, NEC
 MSFC/Bensko, J., Jr.

(62-680 177-52-75)

NAS 8-31373 **Mississippi State University** **2566**
 Study of digital holographic filter generation
Period *Obligations*
 03/20/75-03/20/76 **FY75: \$9,980** **TOTAL: \$9,980**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Ingels, F. M. MSFC/Keer, J. H. 45-Elec Engr
 MSFC/Smith, H. F.

(62-620 656-23-01)

NAS 9-13363 **Mississippi State University** **2567**
 Study of application of Skylab EREP data to agriculture in the Mississippi delta alluvial plains region. Skylab EREP investigation no. 339
Period *Obligations*
 04/23/73-08/31/75 **FY75: \$8,000** **TOTAL: \$53,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Bouchillon, C. W. JSC/Forbes, C. D. 99-Multi-Discip

(72-680 652-01-82)

NAS13-10 **Mississippi State University** **2568**
 Design of a solar powered water hyacinth dryer
Period *Obligations*
 03/14/75-06/27/75 **FY75: \$9,420** **TOTAL: \$9,420**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Forbes, R. E. NSTL/Montgomery, W. D. 49-Engr, NEC
 NSTL/Wolverton, B. C.

(62-601 644-02-02)

NCA 8-107 **Mississippi State University** **2569**
 A study of the fracture mechanics properties of ceramic materials
Period *Obligations*
 03/10/75-03/09/76 **FY75: \$13,000** **TOTAL: \$13,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Hall, W. B. MSFC/King, H. M. 47-Materials Engr

(62-980 909-54-38)

NGL 25-001-040 **Mississippi State University** **2570**
 Interdisciplinary program in earth resource and environmental research
Period *Obligations*
 05/07/71-01/01/75 **FY75:** **TOTAL: \$100,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Brown, L. R. HQ-P/Redding, E. R. 39-Env Sci, NEC
 MSFC/Kent, M. I.

(10-371 340-00-00)

NGL 25-001-054 **Mississippi State University** **2571**
 Application of remotely sensed data to state and regional problems
Period *Obligations*
 11/01/73-10/31/77 **FY75: \$100,000** **TOTAL: \$300,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Bouchillon, C. W. HQ-P/Vitale, J. A. 39-Env Sci, NEC
 MSFC/McDonough, G. F.

(10-371 340-00-00)

NGR 25-001-050 **Mississippi State University** **2572**
 Stiffness and damping of inherently compensated gas thrusting bearing with finite square geometry
Period *Obligations*
 01/30/73-12/31/75 **FY75: \$9,016** **TOTAL: \$26,308**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Stiffler, A. K. LERC/Fleming, D. P. 46-Mech Engr
 LERC/Cunningham, R. E.

(22-702 505-04-41)

NGR 25-001-055 **Mississippi State University** **2573**
 Numerical solution of the Navier-Stokes equations for arbitrary two-dimensional multi-element airfoils
Period *Obligations*
 01/01/74-12/31/75 **FY75: \$29,435** **TOTAL: \$54,435**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Thompson, J. F. LARC/Bobbitt, P. J. 41-Aero Engr
 LARC/Newman, P. A.

(23-702 505-06-31)

NSG 1083 **Mississippi State University** **2574**
 An exploratory investigation of the cooling drag associated with general aviation propulsive systems
Period *Obligations*
 09/01/74-08/31/75 **FY75: \$44,646** **TOTAL: \$44,646**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Cross, E. J., Jr. LARC/Hall, A. W. 41-Aero Engr
 Mertaugh, L. J.

(23-702 505-10-11)

NSG 8009 **Mississippi Valley State Univ.** **2575**
 Biological indicators for monitoring the water quality of MTF canals system
Period *Obligations*
 04/25/74-04/26/76 **FY75: \$24,467** **TOTAL: \$44,521**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Sethi, S. L. MSFC/Wolverton, B. C. 51-Biology
 MSFC/Kent, M. I.

(62-371 340-00-00)

NAS 3-19431 **University of Mississippi - University** **2576**
 Study of atmosphere absorption of high frequency noise
Period *Obligations*
 04/21/75-05/20/76 **FY75: \$126,664** **TOTAL: \$126,664**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Shields, F. D. LERC/Gutierrez, O. A. 41-Aero Engr
 Bass, H. E.

(22-702 743-03-11)

NASA'S UNIVERSITY PROGRAM

MISSISSIPPI (Continued)

NGL 25-005-007 **University of Southern Mississippi** **2577**
 Remote sensing study of land use sedimentation in Rose Barnett Reservoir, Jackson, Mississippi area

<i>Period</i>	<i>Obligations</i>	
02/15/72-02/28/76	FY75: TOTAL: \$150,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Pinson, J. W.	NSTL/Vitale, J. A.	39-Env Sci, NEC
(10-371 340-00-00)		

NGR 25-005-005 **University of Southern Mississippi** **2578**
 Novel diacids & dianhydrides as polymer precursors

<i>Period</i>	<i>Obligations</i>	
06/09/71-06/30/76	FY75: \$78,000 TOTAL: \$175,050	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Thames, S. F.	LARC/Johnston, N. J.	12-Chemistry
(23-702 505-01-34)	LARC/Bell, V. L.	(23-704 501-21-22)

MISSOURI

NGL 26-006-021 **Saint Louis University** **2579**
 Computer method for redesigning and nonlinear analysis of a redundant complex structure

<i>Period</i>	<i>Obligations</i>	
02/04/69-11/30/75	FY75: \$3,490 TOTAL: \$111,495	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Long, C. A.	LARC/Sobieszczanski, J. E.	41-Aero Engr
Rhodes, J. L.		
(23-702 505-02-13)		

NGR 26-006-039 **Saint Louis University** **2580**
 Evaluation of cutaneous sensitivity

<i>Period</i>	<i>Obligations</i>	
08/23/71-11/01/75	FY75: \$3,300 TOTAL: \$30,591	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Van Beaumont, W.	ARC/Greenleaf, J. E.	53-Other Medical
(21-970 970-21-14)	(21-970 970-21-00)	

NGR 26-006-042 **Saint Louis University** **2581**
 Reinterpretation of Mariner 9 IRIS data

<i>Period</i>	<i>Obligations</i>	
10/03/73-11/30/75	FY75: \$28,926 TOTAL: \$43,917	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Pallman, A. J.	HQ-SL/Fellows, R. F.	31-Atmos Sci
(10-840 384-47-81)	HQ-SL/Brunk, W. E.	

NSG 2023 **Saint Louis University** **2582**
 Monitoring of local sweating response with the onset of motion sickness

<i>Period</i>	<i>Obligations</i>	
05/01/74-04/30/76	FY75: TOTAL: \$12,800	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Van Beaumont, W.	ARC/Anliker, J. E.	53-Other Medical
(21-970 970-21-11)		

NAS 5-20818 **University of Missouri - Columbia** **2583**
 Applications of airborne lidar measurement study

<i>Period</i>	<i>Obligations</i>	
01/29/75-08/15/76	FY75: \$49,586 TOTAL: \$49,586	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Schuster, B. G.	GSFC/Curran, R. J.	31-Atmos Sci
(51-601 645-10-03)		

NAS 5-20826 **University of Missouri - Columbia** **2584**
 Detection and synchronization in complex space communication links

<i>Period</i>	<i>Obligations</i>	
01/15/75-08/31/75	FY75: \$19,850 TOTAL: \$19,850	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Noack, T. L.	GSFC/Poland, W. B., Jr.	45-Elec Engr
(51-500 311-20-20)		

NAS 8-31150 **University of Missouri - Columbia** **2585**
 Research study of microphysical processes in atmospheric clouds

<i>Period</i>	<i>Obligations</i>	
02/11/75-02/11/76	FY75: \$26,909 TOTAL: \$26,909	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Plummer, P. L.	MSFC/Smith, R. E.	31-Atmos Sci
Hale, B. N.	MSFC/Hill, C. K.	
(62-680 175-11-72)		

NAS 9-12526 **University of Missouri - Columbia** **2586**
 Development of a mathematical model

<i>Period</i>	<i>Obligations</i>	
03/07/72-09/30/75	FY75: \$14,905 TOTAL: \$42,905	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Winnick, J.	JSC/Ellis, W. E.	43-Chem Engr
(72-970 970-52-21)	(72-910 914-52-00)	

NAS 9-14369 **University of Missouri - Columbia** **2587**
 Application of cabin atmosphere monitors to rapid screening of breath samples for the early detection of disease states

<i>Period</i>	<i>Obligations</i>	
10/01/74-09/30/75	FY75: \$36,983 TOTAL: \$36,983	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bryant, P. J.	JSC/Pummel, J. A.	59-Life Sci, NEC
(72-970 970-51-45)		

NGL 26-004-021 **University of Missouri - Columbia** **2588**
 Effects of radiation on gastro-intestinal function and cyclic turnover of intestinal epithelium

<i>Period</i>	<i>Obligations</i>	
07/13/65-10/01/75	FY75: \$20,000 TOTAL: \$330,764	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Musacchia, X. J.	ARC/Holton, E. M.	51-Biology
(21-970 970-21-61)	(53-970 970-71-61)	

NGR 26-004-099 **University of Missouri - Columbia** **2589**
 Composite polymer films for long term biological sensors

<i>Period</i>	<i>Obligations</i>	
06/22/72-08/31/75	FY75: \$20,000 TOTAL: \$94,830	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hahn, A. W.	ARC/Sandler, H.	52-Clinical Med
(21-970 970-23-30)	(21-970 970-23-00)	

**NASA'S UNIVERSITY PROGRAM
MISSOURI (Continued)**

NGR 26-001-018	University of Missouri - Kansas City	2590			
Luminescence of nucleic acids and dyes					
<i>Period</i>	<i>Obligations</i>				
09/01/74-09/06/76	FY75: \$10,000	TOTAL: \$19,904			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Millich, F.	ARC/Ginoza, H. S.	12-Chemistry			
(21-840 192-55-62)	(21-840 192-55-63)				
NAS 8-31538	University of Missouri - Rolla	2591			
Preliminary aerosol generator design studies					
<i>Period</i>	<i>Obligations</i>				
06/09/75-06/09/76	FY75: \$27,389	TOTAL: \$27,389			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Stampfer, J. F., Jr.	MSFC/Smi, R. E.	13-Physics			
(62-601 645-10-01)	MSFC/Schrick, B. J.				
NCA 2-50501	University of Missouri - Rolla	2592			
Structure properties of graphite fiber-composites					
<i>Period</i>	<i>Obligations</i>				
07/01/74-06/30/75	FY75: \$10,000	TOTAL: \$10,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Levenson, L. L.	ARC/Zill, L. P.	47-Materials Engr			
(21-704 506-16-11)					
NGR 26-003-069	University of Missouri - Rolla	2593			
Nutation control during precession of a spinstabilized spacecraft					
<i>Period</i>	<i>Obligations</i>				
07/01/73-06/30/74	FY75:	TOTAL: \$14,477			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Taylor, J. M.	GSFC/Flatley, T. W.	49-Engr, NEC			
(51-680 160-20-51)					
NGR 26-004-097	University of Missouri - Rolla	2594			
Research in bioenvironmental systems					
<i>Period</i>	<i>Obligations</i>				
04/17/72-08/31/76	FY75: \$2,128	TOTAL: \$59,878			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Mills, J. B.	ARC/Quattrone, P. D.	59-Life Sci, NEC			
(21-970 970-22-30)	(21-970 970-22-00)				
NSG 1050	University of Missouri - Rolla	2595			
Structural-acoustic response and interior noise levels of fuselage structures					
<i>Period</i>	<i>Obligations</i>				
09/01/74-12/31/75	FY75:	TOTAL: \$29,949			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Koval, L. R.	LARC/Mixson, J. S.	41-Aero Engr			
(23-702 760-61-02)					
NAS 1-13889	Washington University	2596			
Viking/Lander imaging studies					
<i>Period</i>	<i>Obligations</i>				
05/05/75-03/31/77	FY75: \$15,000	TOTAL: \$15,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Arvidson, R. E.	LARC/Williams, T. S., Jr.	39-Env Sci, NEC			
(23-840 815-20-00)					
NAS 2-7613	Washington University	2597			
Lifter rotor random modes and vibration					
<i>Period</i>	<i>Obligations</i>				
07/01/73-06/30/76	FY75: \$30,000	TOTAL: \$212,644			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Hohenemser, K. H.	ARC/Morse, H. A.	41-Aero Engr			
Prelewicz, D. A.	ARC/Statler, I. C.				
Yin, S. K.					
(21-702 760-17-00)					
NAS 5-20680	Washington University	2598			
Earth observation data management system					
<i>Period</i>	<i>Obligations</i>				
08/23/74-08/31/76	FY75: \$233,000	TOTAL: \$233,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Morgan, R. P.	GSFC/Quann, J. J.	99-Multi-Discip			
Eastwood, L. F.					
Hill, C. T.					
(51-620 643-10-01)	(51-620 656-11-01)				
NAS 8-26084	Washington University	2599			
Wave propagation in thermoviscous media					
<i>Period</i>	<i>Obligations</i>				
06/10/70-07/31/74	FY75:	TOTAL: \$39,971			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Rodin, E. Y.	MSFC/Jones, J. H.	13-Physics			
(62-920 982-00-00)	(62-920 976-30-00)	(62-742 124-00-00)			
NAS 8-27976	Washington University	2600			
Design, development and operation of a heavy nuclei experiment under the HEAO program					
<i>Period</i>	<i>Obligations</i>				
06/16/72-02/15/78	FY75: \$68,000	TOTAL: \$205,004			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Israel, M. H.	MSFC/Krome, H. O.	11-Astronomy			
(62-850 832-12-00)	MSFC/Cochran, J.				
	(62-850 832-00-00)				
NGL 26-008-054	Washington University	2601			
Application of satellite communications to educational development					
<i>Period</i>	<i>Obligations</i>				
10/13/69-08/31/75	FY75:	TOTAL: \$645,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Morgan, R. P.	HQ-P/Redding, E. R.	99-Multi-Discip			
(10-371 340-00-00)	(10-370 183-00-00)				
NGL 26-008-057	Washington University	2602			
Development of solar wind shock models with tensor plasma pressure for data analysis					
<i>Period</i>	<i>Obligations</i>				
12/29/69-12/31/75	FY75: \$229	TOTAL: \$50,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Abrahamshrauner, B.	HQ-SG/Berko, F. W.	13-Physics			
(10-850 188-00-00)	(10-850 188-36-55)				
NGL 26-008-065	Washington University	2603			
Lunar sample analysis					
<i>Period</i>	<i>Obligations</i>				
02/01/71-01/31/78	FY75: \$421,190	TOTAL: \$1,530,343			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Walker, R. M.	JSC/Harris, J. W.	13-Physics			
(72-810 388-10-01)					

**NASA'S UNIVERSITY PROGRAM
MISSOURI (Continued)**

NGR 26-008-001 Washington University **2604**
Determination of characteristics of high altitude primary cosmic radiation at low latitudes

<i>Period</i>	<i>Obligations</i>	
09/01/61-11/15/75	FY75: \$115,000	TOTAL: \$1,163,281
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Klarmann, J.	HQ-SG/Lazarus, A. J.	11-Astronomy
Israel, M. H.	HQ-SG/Opp, A. G.	
(10-850 188-46-56)	(10-850 188-46-51)	

NGR 26-008-069 Washington University **2605**
Astronomy at sub-millimeter wavelengths

<i>Period</i>	<i>Obligations</i>	
04/26/71-01/31/75	FY75:	TOTAL: \$119,666
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Friedlander, M. W.	HQ-SG/Bogges, N. W.	11-Astronomy
(10-850 188-00-00)		

NSG 1016 Washington University **2606**
High resolution ultrasonic sensor for observation of particles in fluids

<i>Period</i>	<i>Obligations</i>	
03/15/74-03/14/76	FY75: \$33,983	TOTAL: \$63,941
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Miller, J. G.	LARC/Heyman, J. S.	13-Physics
(23-704 502-23-56)	LARC/Hendricks, H. D.	

NSG 1084 Washington University **2607**
Imaging natural material with a planetary lander quasi-microscope

<i>Period</i>	<i>Obligations</i>	
07/01/74-08/31/76	FY75: \$28,741	TOTAL: \$28,741
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Arvidson, R. E.	LARC/Kelly, W. L.	32-Geological Sci
(23-704 506-18-21)		

NSG 1157 Washington University **2608**
Damage repair in composites

<i>Period</i>	<i>Obligations</i>	
03/10/75-03/09/76	FY75: \$30,000	TOTAL: \$30,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wu, E. M.	LARC/Deaton, J. W.	46-Mech Engr
(23-702 505-02-41)	LARC/Hoffman, E. L.	

NSG 7016 Washington University **2609**
Lunar data analysis and synthesis program on lunar surface dynamics

<i>Period</i>	<i>Obligations</i>	
12/01/73-12/31/75	FY75: \$63,979	TOTAL: \$123,137
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hohenberg, C. M.	HQ-SM/Hosterman, J. W.	32-Geological Sci
Arvidson, R. E.	HQ-SM/Roberson, F. I.	
Podosek, F. A.		
(10-810 383-20-02)		

NSG 7087 Washington University **2610**
Computerized analysis of Martian crater and aeolian feature data

<i>Period</i>	<i>Obligations</i>	
08/01/74-07/31/75	FY75: \$9,911	TOTAL: \$9,911
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Arvidson, R. E.	HQ-SL/Dwornik, S. E.	32-Geological Sci
(10-840 384-50-80)	HQ-SL/Holt, H. E.	

MONTANA

NGR 27-001-040 Montana State University **2611**
Establishment of a mission-oriented gravitation research center

<i>Period</i>	<i>Obligations</i>	
06/28/71-08/31/75	FY75: \$20,000	TOTAL: \$114,350
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nordtvedt, K., Jr.	HQ-SG/Roman, N. G.	11-Astronomy
(10-850 188-41-54)	HQ-SG/Rosenthal, J. D.	

NSG 2030 University of Montana **2612**
Satellite wildlife research

<i>Period</i>	<i>Obligations</i>	
05/01/74-05/01/76	FY75:	TOTAL: \$15,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Craighead, J. J.	ARC/Sebesta, P. D.	39-Env Sci, NEC
(21-680 178-56-13)	ARC/Billingham, J.	

NEBRASKA

NAS 5-20814 University of Nebraska - Lincoln **2613**
ERTS data follow-on investigation

<i>Period</i>	<i>Obligations</i>	
03/10/75-07/10/77	FY75: \$70,736	TOTAL: \$70,736
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Carlson, M.	GSFC/Szajna, E. F.	49-Engr, NEC
(51-680 641-15-00)		

NAS 5-21756 University of Nebraska - Lincoln **2614**
Evaluation of ERTS-A imagery in mapping and managing soil and range resources in the sand hills region of Nebraska

<i>Period</i>	<i>Obligations</i>	
05/25/72-02/01/75	FY75:	TOTAL: \$51,200
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Drew, J. V.	GSFC/Freden, S. C.	39-Env Sci, NEC
Burzlaff, D. F.		
(51-680 641-14-01)		

NAS 5-23125 University of Nebraska - Lincoln **2615**
Calibration of magnetic electron multipliers

<i>Period</i>	<i>Obligations</i>	
06/23/72-09/30/75	FY75: \$6,940	TOTAL: \$68,386
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Samson, J. A.	GSFC/Kalet, M. W.	13-Physics
(51-850 188-38-53)	(51-850 188-38-64)	(51-850 879-11-00)

**NASA'S UNIVERSITY PROGRAM
NEBRASKA (Continued)**

NAS 9-11045 University of Nebraska - Lincoln 2616
Health protection and food preservation by gamma irradiation of food

<i>Period</i>	<i>Obligations</i>	
06/29/70-11/30/75	FY75: \$10,000	TOTAL: \$99,977
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hartung, T. E. (72-970 970-52-24)	JSC/Smith, M. C., Jr. (72-970 970-00-00)	59-Life Sci, NEC

NGL 28-004-020 University of Nebraska - Lincoln 2617
Applications of remote sensing in resource management in Nebraska

<i>Period</i>	<i>Obligations</i>	
04/20/72-04/30/78	FY75: \$125,000	TOTAL: \$375,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Drew, J. V. (10-371 340-00-00)	HQ-P/Vitale, J. A.	39-Env Sci, NEC

NGR 28-004-021 University of Nebraska - Lincoln 2618
Interaction of radiation with planetary gases

<i>Period</i>	<i>Obligations</i>	
02/23/73-01/31/77	FY75: \$47,366	TOTAL: \$173,319
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Samson, J. A. (10-840 185-47-85)	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E. (10-840 185-47-84)	31-Atmos Sci

NGR 28-004-025 University of Nebraska - Lincoln 2619
Study into effects of oxidized titanium on hydrogen transport in titanium at low temperatures

<i>Period</i>	<i>Obligations</i>	
09/01/73-09/20/75	FY75: \$11,470	TOTAL: \$19,487
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Johnson, D. L. Shah, K. K. (21-400 778-11-02)	ARC/Nelson, H. G. (21-702 505-01-21)	47-Materials Engr

NGR 28-004-028 University of Nebraska - Lincoln 2620
Physical properties of old novae

<i>Period</i>	<i>Obligations</i>	
05/01/74-04/30/75	FY75:	TOTAL: \$3,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gallagher, J. S. (51-850 831-43-00)	GSFC/Kupperian, J. E.	11-Astronomy

NEVADA

NAS 5-20954 University of Nevada - Reno 2621
Operational applications of satellite snowcover observations

<i>Period</i>	<i>Obligations</i>	
04/02/75-12/31/75	FY75: \$7,620	TOTAL: \$7,620
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Squires, P. Cutler, M. L. (51-680 177-60-41)	GSFC/Rango, A.	39-Env Sci, NEC

NAS 8-31441 University of Nevada - Reno 2622
Zero-8 cloud drop coalescence experiment

<i>Period</i>	<i>Obligations</i>	
04/21/75-11/20/75	FY75: \$24,000	TOTAL: \$24,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Telford, J. W. (62-680 175-11-72)	MSFC/Smith, R. E. MSFC/Schrick, B. J. (62-680 175-41-71)	19-Phys Sci, NEC

NAS 8-31470 University of Nevada - Reno 2623
Study of zero-gravity atmospheric cloud physics lab chamber development

<i>Period</i>	<i>Obligations</i>	
05/13/75-05/12/76	FY75: \$48,998	TOTAL: \$48,998
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Squires, P. (62-601 645-10-01)	MSFC/Smith, R. E. MSFC/Schrick, B. J.	31-Atmos Sci

NAS 9-13274 University of Nevada - Reno 2624
The great basin investigation

<i>Period</i>	<i>Obligations</i>	
02/05/73-05/31/75	FY75: \$21,100	TOTAL: \$117,100
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Quade, J. (72-960 948-63-83)	JSC/Miller, M. L. (72-680 652-01-83)	32-Geological Sci

NEW HAMPSHIRE

NAS 9-13311 Dartmouth College 2625
Investigation of thermal anomalies in central American volcanic chain and evaluation of utility of thermal anomaly monitoring in predicting volcanic eruptions

<i>Period</i>	<i>Obligations</i>	
03/06/73-12/31/75	FY75: \$3,870	TOTAL: \$14,470
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stoieber, R. E. (72-680 652-01-83)	JSC/Miller, M. L.	32-Geological Sci

NAS 9-14439 Dartmouth College 2626
Study of thyroid and environmental stress in mammals

<i>Period</i>	<i>Obligations</i>	
01/01/75-06/30/76	FY75: \$28,544	TOTAL: \$28,544
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Galton, V. A. (72-970 970-51-16)	JSC/Leach, C. S.	53-Other Medical

NGR 30-001-040 Dartmouth College 2627
Magnetopause structure from satellite observations

<i>Period</i>	<i>Obligations</i>	
04/28/72-06/30/75	FY75:	TOTAL: \$26,268
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sonnerup, B. U. (10-850 385-00-00)	HQ-SG/Berko, F. W. HQ-SG/Schmerling, E. R.	13-Physics

**NASA'S UNIVERSITY PROGRAM
NEW HAMPSHIRE (Continued)**

NGR 30-001-041 Dartmouth College 2628
Processing and analysis of data from VLF-LF experiments on the OGO-4 and OGO-6 spacecraft and continuation of studies at ground stations

<i>Period</i>	<i>Obligations</i>	
10/02/72-06/30/75	FY75: \$45,000	TOTAL: \$205,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Laaspere, T.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Schmerling, E. R.	

(10-850 385-36-00)

NSG 5014 Dartmouth College 2629
Geological applications of ERTS data

<i>Period</i>	<i>Obligations</i>	
07/01/74-03/31/76	FY75: \$40,000	TOTAL: \$164,400
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Huke, R. E.	GSFC/Jastrow, R.	39-Env Sci, NEC
Drake, C. L.	GSFC/Ungar, S.	
Reynolds, R. C.		

(51-500 310-40-41) (51-704 502-23-43)

NSG 7097 Dartmouth College 2630
Magnetopause structure from satellite observations

<i>Period</i>	<i>Obligations</i>	
10/08/74-06/30/75	FY75: \$20,000	TOTAL: \$20,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	HQ-SG/Berko, F. W.	11-Astronomy

(10-850 385-36-00)

NAS 5-11276 University of New Hampshire 2631
Design, testing, & calibration of GSF Pioneer F & G cosmic ray unit

<i>Period</i>	<i>Obligations</i>	
02/11/70-09/01/75	FY75: \$30,000	TOTAL: \$144,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Webber, W. R.	GSFC/Teegarden, B. J.	11-Astronomy

(51-840 811-22-00)

NAS 5-11694 University of New Hampshire 2632
Low energy electron-proton experiment for ATS-F

<i>Period</i>	<i>Obligations</i>	
05/01/69-05/30/76	FY75: \$30,000	TOTAL: \$510,726
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Arnoldy, R. L.	GSFC/Wales, R. O.	11-Astronomy
	GSFC/Corrigan, J. P.	

(51-620 646-22-00) (51-620 630-22-00)

NAS 5-20714 University of New Hampshire 2633
Analysis of OSO-7 data for nuclear activation of NaI CsI

<i>Period</i>	<i>Obligations</i>	
09/25/74-12/25/74	FY75: \$8,002	TOTAL: \$8,002
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chupp, E. L.	GSFC/Trombka, J. I.	13-Physics

(51-850 356-48-00)

NAS 5-20884 University of New Hampshire 2634
Advanced gamma ray balloon experiment ground checkout and data analysis

<i>Period</i>	<i>Obligations</i>	
11/19/74-09/05/75	FY75: \$15,009	TOTAL: \$15,009
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chupp, E. L.	GSFC/Orwig, L. E.	13-Physics
Forrest, D. J.		

(51-850 879-11-00)

NAS 5-22342 University of New Hampshire 2635
Solar gamma ray experiment

<i>Period</i>	<i>Obligations</i>	
05/02/75-09/01/75	FY75: \$36,550	TOTAL: \$36,550
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chupp, E. L.	GSFC/Donley, J. L.	11-Astronomy

(51-850 826-12-00)

NGL 30-002-018 University of New Hampshire 2636
Investigation of energy levels in foil excited atomic beams

<i>Period</i>	<i>Obligations</i>	
03/15/65-01/31/76	FY75: \$15,000	TOTAL: \$172,355
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chupp, E. L.	HQ-SG/Jordan, S. D.	13-Physics
	HQ-SG/Timothy, A. F.	

(10-850 188-38-53) (10-850 188-38-52)

NGL 30-002-021 University of New Hampshire 2637
Investigation and development of techniques for solar neutron and gamma ray detection

<i>Period</i>	<i>Obligations</i>	
02/28/66-06/30/75	FY75: \$35,000	TOTAL: \$875,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chupp, E. L.	HQ-SG/Lazarus, A. J.	11-Astronomy
	HQ-SG/Opp, A. G.	

(10-850 188-46-57)

NGR 30-002-052 University of New Hampshire 2638
Research program in area of cosmic ray and X-ray astronomy

<i>Period</i>	<i>Obligations</i>	
02/12/70-09/30/75	FY75: \$110,000	TOTAL: \$660,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Webber, W. R.	HQ-SG/Opp, A. G.	11-Astronomy
	HQ-SG/Kavanagh, L. D., Jr.	

(10-850 188-46-56) (10-850 385-46-00)

NGR 30-002-054 University of New Hampshire 2639
Auroral particle measurements

<i>Period</i>	<i>Obligations</i>	
09/12/69-12/31/75	FY75: \$32,500	TOTAL: \$259,311
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Arnoldy, R. L.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Schmerling, E. R.	

(10-850 879-11-00) (10-850 879-00-00)

NGR 30-002-104 University of New Hampshire 2640
Gamma ray detector on OSO-7

<i>Period</i>	<i>Obligations</i>	
12/04/73-08/31/76	FY75: \$40,000	TOTAL: \$110,535
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chupp, E. L.	HQ-SG/Timothy, A. F.	13-Physics

(10-850 385-38-00)

**NASA'S UNIVERSITY PROGRAM
NEW JERSEY**

NEW JERSEY

NGL 31-006-010 Fairleigh Dickinson University **2641**
Lunar and planetary spectral reflectivity
Period *Obligations*
08/08/72-02/29/77 **FY75: \$35,000** **TOTAL: \$141,400**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Adams, J. B. HQ-SM/Kosofsky, L. J. 32-Geological Sci
HQ-SM/Roberson, F. I.
(10-810 195-42-65) (10-810 383-00-00) (10-810 383-09-57)

NGL 31-006-011 Fairleigh Dickinson University **2642**
Lunar sample analysis
Period *Obligations*
09/19/72-01/31/77 **FY75:** **TOTAL: \$279,865**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Adams, J. B. JSC/Harris, J. W. 13-Physics
(72-810 388-10-03)

NSG 7047 Fairleigh Dickinson University **2643**
Spectral reflectance of lunar samples to telescopic spectra of
unvisited parts of the moon
Period *Obligations*
02/01/74-01/31/75 **FY75:** **TOTAL: \$25,700**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hartung, J. B. HQ-SM/Kosofsky, L. J. 32-Geological Sci
HQ-SM/Roberson, F. I.
(10-810 383-20-02)

NCA 2-50501 Jersey City State College **2644**
Analyze infrared stellar spectra
Period *Obligations*
06/16/75-08/29/75 **FY75: \$4,060** **TOTAL: \$4,060**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bailey, W. L. ARC/Zill, L. P. 11-Astronomy
(21-850 352-02-03)

NAS 1-9705 Princeton University **2645**
Participation in the science planning for the Viking 1975 missions
in the area of magnetic properties
Period *Obligations*
04/03/70-03/31/77 **FY75: \$8,530** **TOTAL: \$109,593**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hargraves, R. B. LARC/Williams, T. S., Jr. 19-Phys Sci, NEC
LARC/Glenny, W. R.
(23-840 815-20-00)

NAS 1-13502 Princeton University **2646**
In-flight evaluation of decoupler longitudinal controls for a STOL
transport aircraft
Period *Obligations*
08/19/74-04/30/76 **FY75: \$132,657** **TOTAL: \$132,657**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Socell, E. LARC/Miller, G. K. 41-Aero Engr
Ellis, D. R. LARC/Queijo, M. J.
(23-702 512-53-01) (23-704 501-23-32)

NAS 2-7350 Princeton University **2647**
STOL approach & landing research
Period *Obligations*
03/02/73-07/15/75 **FY75: \$48,895** **TOTAL: \$273,884**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Seckel, E. ARC/Franklin, J. A. 41-Aero Engr
(21-702 514-51-01) (21-702 766-71-02)

NAS 2-7615 Princeton University **2648**
Effects of distributed blade properties on stability of hingeless
blades
Period *Obligations*
05/30/73-09/30/75 **FY75: \$42,000** **TOTAL: \$82,345**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dowell, E. H. ARC/Morse, H. A. 41-Aero Engr
Curtiss, H. C., Jr. ARC/Hodges, D. H.
(21-702 760-17-00) (21-704 501-17-00)

NAS 5-1810 Princeton University **2649**
Design, development, fabrication, & testing of orbiting astronomi-
cal observatory experiment
Period *Obligations*
06/08/72-12/01/78 **FY75: \$910,800** **TOTAL: \$17,557,598**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Spitzer, L., Jr. GSFC/Kupperian, J. E. 11-Astronomy
(51-850 831-42-00)

NAS 5-20069 Princeton University **2650**
Large high resolution integrating TV sensor study
Period *Obligations*
04/11/74-03/31/75 **FY75: \$770** **TOTAL: \$77,770**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Spitzer, L., Jr. GSFC/Sobieski, S. 11-Astronomy
Lowrance, J. L. GSFC/Sturgell, C. C.
(51-850 188-78-56)

NAS 5-20507 Princeton University **2651**
Permanent magnet focusing study
Period *Obligations*
04/23/74-11/23/74 **FY75:** **TOTAL: \$33,400**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lowrance, J. L. GSFC/Kelsall, T. N. 49-Engr, NEC
GSFC/Sobieski, S.
(51-850 188-78-56)

NAS 5-20833 Princeton University **2652**
Large high resolution integrating TV sensor for astronomical
applications
Period *Obligations*
10/23/74-02/09/76 **FY75: \$250,066** **TOTAL: \$250,066**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lowrance, J. L. GSFC/Sobieski, S. 11-Astronomy
(51-850 188-78-56) (51-850 893-78-56)

NAS 5-22360 Princeton University **2653**
Spectroscopy using the one meter ultraviolet optical telescope
for spacelab astronomy missions
Period *Obligations*
04/18/75-12/31/75 **FY75: \$8,404** **TOTAL: \$8,404**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jenkins, E. B. GSFC/Lecrone, D. F. 32-Geological Sci
(51-850 356-41-01)

**NASA'S UNIVERSITY PROGRAM
NEW JERSEY (Continued)**

NAS 5-22482 Princeton University 2654
Investigation of impurities in magnesium fluoride
Period *Obligations*
06/27/75-02/27/76 FY75: \$5,830 TOTAL: \$5,830
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Danielson, R. E. GSFC/Sobieski, S. 12-Chemistry
(51-850 188-78-56) (51-850 188-78-58) (51-850 893-78-56)

NGL 31-001-283 Princeton University 2661
Lunar sample analysis
Period *Obligations*
06/30/72-01/31/77 FY75: \$33,900 TOTAL: \$232,900
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hollister, L. S. JSC/Harris, J. W. 11-Astronomy
(72-810 388-10-01) (72-910 914-40-00)

NAS 5-23284 Princeton University 2655
Instrument definition study for the high resolution imaging camera for large space telescope
Period *Obligations*
07/20/73-08/31/75 FY75: \$9,900 TOTAL: \$27,411
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Danielson, R. E. GSFC/Sobieski, S. 11-Astronomy
GSFC/Meese, K. J.
(51-850 893-78-56) (51-850 188-78-58) (51-850 188-78-56)

NGR 31-001-001 Princeton University 2662
Stratoscope II program
Period *Obligations*
02/12/70-09/30/75 FY75: TOTAL: \$2,740,925
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Millich, F. HQ-SG/Roman, N. G. 11-Astronomy
(10-850 188-41-51)

NGL 31-001-005 Princeton University 2656
Formation & stability of magnetogasdynamic front in a pitch discharge
Period *Obligations*
09/24/62-09/30/77 FY75: \$160,000 TOTAL: \$2,102,912
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jahn, R. G. HQ-RP/Lazar, J. 42-Astro Engr
Von Jaskowsky, W. F.
Clark, K. E.
(10-704 506-22-42) (10-704 502-04-14)

NGR 31-001-152 Princeton University 2663
Analytical methods of trajectory analysis
Period *Obligations*
01/15/70-09/30/75 FY75: TOTAL: \$229,600
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lion, P. M. GSFC/Barbieri, R. W. 42-Astro Engr
(51-830 180-06-50)

NGL 31-001-007 Princeton University 2657
Theoretical & experimental studies of ultraviolet phenomena of astronomical interest & galactic gas dynamics
Period *Obligations*
05/06/63-03/31/78 FY75: \$100,000 TOTAL: \$1,677,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Spitzer, L., Jr. HQ-SG/Roman, N. G. 11-Astronomy
HQ-SG/Rosendhal, J. D.
(10-850 188-41-51) (10-850 188-00-00)

NGR 31-001-197 Princeton University 2664
Three dimensional boundary layer effects on panel flutter
Period *Obligations*
03/25/70-10/31/75 FY75: \$66,950 TOTAL: \$238,230
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dowell, E. H. ARC/Gaspers, P. A., Jr. 41-Aero Engr
(21-702 505-02-21) (21-704 501-22-05) (21-760 126-00-00)

NGL 31-001-119 Princeton University 2658
Theoretical problems connected with sonic boom
Period *Obligations*
01/19/68-09/30/75 FY75: TOTAL: \$167,790
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hayes, W. D. LARC/Hilton, D. A. 41-Aero Engr
(23-704 501-06-11) (10-740 129-00-00) (23-760 136-00-00)

NGR 31-001-202 Princeton University 2665
Lunar retro-reflector ranging
Period *Obligations*
05/27/70-06/14/76 FY75: TOTAL: \$15,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dicke, R. H. HQ-SM/Strickland, A. T. 13-Physics
(10-810 383-00-00)

NGL 31-001-146 Princeton University 2659
Boundary layer noise and panel flutter
Period *Obligations*
10/24/68-11/01/77 FY75: \$30,000 TOTAL: \$342,280
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dowell, E. H. LARC/Mixson, J. S. 41-Aero Engr
(23-702 505-02-21) (23-704 502-32-02) (23-742 124-00-00)

NGR 31-001-221 Princeton University 2666
Investigation of structure-property relations in systematic series of novel polymers
Period *Obligations*
03/11/71-08/31/75 FY75: TOTAL: \$105,011
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gillham, J. K. LARC/Johnston, N. J. 12-Chemistry
(23-704 501-21-23)

NGL 31-001-252 Princeton University 2660
Air traffic control technology
Period *Obligations*
11/15/71-10/31/77 FY75: \$50,000 TOTAL: \$250,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Graham, D. LARC/Reid, H. J., Jr. 41-Aero Engr
Hazelrigg, G. A. LARC/Mace, W. D.
(23-702 505-07-12) (23-750 135-00-00)

NGR 31-001-236 Princeton University 2667
Large high resolution integrating TV sensor for astronomical applications
Period *Obligations*
06/15/71-03/31/75 FY75: \$60,000 TOTAL: \$591,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Spitzer, L., Jr. GSFC/Sobieski, S. 11-Astronomy
Lowrance, J. L.
(51-850 188-78-56) (10-980 975-84-00) (10-850 188-78-56)

**NASA'S UNIVERSITY PROGRAM
NEW JERSEY (Continued)**

NGR 31-001-242 **Princeton University** **2668**
A new spectroscopic technique utilizing the Fabry-Perot interferometer

<i>Period</i>	<i>Obligations</i>	
07/13/72-06/30/75	FY75: \$134,288	TOTAL: \$201,817
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Smith, W. H.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Fellows, R. F.	
(10-840 196-41-84)	(10-840 196-00-00)	

NGR 31-001-307 **Princeton University** **2674**
Fundamental and applied research on core engine combustion noise of aircraft engines

<i>Period</i>	<i>Obligations</i>	
06/01/73-06/14/76	FY75:	TOTAL: \$39,444
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Plett, E. G.	LERC/Stone, J. R.	41-Aero Engr
Summerfield, M.		
(22-704 501-15-83)		

NGR 31-001-267 **Princeton University** **2669**
Theoretical analysis of impact in composite plates

<i>Period</i>	<i>Obligations</i>	
04/03/72-08/31/75	FY75:	TOTAL: \$93,950
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dowell, E. H.	LERC/Chamis, C. C.	41-Aero Engr
Kang, C. K.	LERC/Younger, C. L.	
(22-704 502-22-09)	(22-704 501-22-03)	

NGR 31-001-312 **Princeton University** **2675**
Chemical laser action in low pressure metal flames

<i>Period</i>	<i>Obligations</i>	
10/01/73-09/30/75	FY75: \$25,000	TOTAL: \$45,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Glassman, I.	LERC/Dunning, J. W., Jr.	12-Chemistry
Naegeli, D. W.		
(22-704 506-21-40)	(22-704 502-04-25)	

NGR 31-001-272 **Princeton University** **2670**
Structure property relations in low temperature adhesives

<i>Period</i>	<i>Obligations</i>	
03/31/72-10/31/74	FY75:	TOTAL: \$80,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gillham, J. K.	LARC/McHatton, A. D.	19-Phys Sci, NEC
(23-704 501-22-10)	(23-703 320-00-00)	

NGR 31-001-328 **Princeton University** **2676**
Nuclear fission plasma characterization and applications analysis research

<i>Period</i>	<i>Obligations</i>	
10/01/73-12/30/74	FY75:	TOTAL: \$75,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Layton, J. P.	HQ-RR/Thom, K.	13-Physics
Stoenescu, M. L.	LERC/Kaufman, S. J.	
(10-704 502-01-01)		

NGR 31-001-274 **Princeton University** **2671**
Studies in elastic and electromagnetic wave scattering in the lunar crust

<i>Period</i>	<i>Obligations</i>	
06/29/72-06/30/74	FY75:	TOTAL: \$80,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Phinney, R. A.	HQ-SM/Bryson, R. P.	32-Geological Sci
Jordan, T. H.	HQ-SM/Allenby, R. J.	
(10-810 383-00-00)		

NSG 1070 **Princeton University** **2677**
Resonant Doppler velocimeter

<i>Period</i>	<i>Obligations</i>	
07/01/74-08/31/75	FY75:	TOTAL: \$52,051
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Greaux, A. E.	LARC/Hunter, W. W.	13-Physics
	LARC/Exton, R. J.	
(23-704 503-10-01)		

NGR 31-001-277 **Princeton University** **2672**
VTOL mathematical model designs for optimal control systems designs

<i>Period</i>	<i>Obligations</i>	
04/20/72-11/31/75	FY75: \$91,373	TOTAL: \$190,703
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dukes, T. A.	ARC/Cicolani, L. S.	41-Aero Engr
Durbin, E. J.		
(21-702 505-07-11)	(21-704 501-03-11)	

NSG 1078 **Princeton University** **2678**
An exploratory flight investigation of lateral control nonlinearities and their effects on handling qualities

<i>Period</i>	<i>Obligations</i>	
07/01/74-12/31/75	FY75: \$14,250	TOTAL: \$14,250
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Seckel, E.	LARC/Crane, H. L.	41-Aero Engr
Ellis, D. R.		
(23-702 505-10-11)		

NGR 31-001-306 **Princeton University** **2673**
High resolution spectrograph for the large space telescope

<i>Period</i>	<i>Obligations</i>	
10/01/73-06/30/76	FY75: \$1,600	TOTAL: \$3,200
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Morton, D. C.	GSFC/Sobieski, S.	11-Astronomy
	GSFC/Meese, K. J.	
(51-850 893-78-56)	(51-850 188-78-58)	

NSG 1129 **Princeton University** **2679**
Conceptual design study of gas-core nuclear reactors

<i>Period</i>	<i>Obligations</i>	
12/16/74-12/15/75	FY75: \$80,000	TOTAL: \$80,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stoenescu, M. L.	LARC/Lazarus, A. J.	49-Engr, NEC
Bogdonoff, S. M.	LARC/Opp, A. G.	
(23-704 506-24-11)		

NSG 2037 **Princeton University** **2680**
Comparison of intercity travel modes

<i>Period</i>	<i>Obligations</i>	
07/15/74-07/31/75	FY75: \$3,500	TOTAL: \$3,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fels, M. F.	ARC/Mascy, A. C.	39-Env Sci, NEC
(21-701 791-93-23)		

NASA'S UNIVERSITY PROGRAM

NEW JERSEY (Continued)

NSG 2045 Princeton University 2681
 Aeroelasticity influence of tilt/propellor aircraft and dynamic response characteristics application
Period *Obligations*
 10/01/74-10/01/75 FY75: \$45,509 TOTAL: \$45,509
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Curtiss, H. C., Jr. ARC/Rabbott, J. P., Jr. 41-Aero Engr
 Putman, W. F. ARC/Johnson, W. R.
 (21-702 505-10-22)

NSG 2062 Princeton University 2682
 Studies of space colonization
Period *Obligations*
 01/01/75-09/30/75 FY75: \$27,440 TOTAL: \$27,440
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 O'Neill, G. K. ARC/Johnson, R. D. 99-Multi-Discip
 (21-970 970-24-04)

NSG 5063 Princeton University 2683
 Measurements of sec tube energetic charged particle induced background
Period *Obligations*
 04/01/75-03/31/76 FY75: \$22,031 TOTAL: \$22,031
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Lowrance, J. L. GSFC/Kelsall, T. N. 49-Engr, NEC
 Spitzer, L., Jr. GSFC/Sobieski, S.
 (51-850 893-78-56)

NSG 7053 Princeton University 2684
 Theoretical & laboratory planetary physics
Period *Obligations*
 04/01/74-06/30/76 FY75: \$46,100 TOTAL: \$82,982
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Danielson, R. E. HQ-SL/Brunk, W. E. 11-Astronomy
 HQ-SL/Fellows, R. F.
 (10-840 196-41-84)

NSG 7080 Princeton University 2685
 Study of elastic wave propagation in the moon
Period *Obligations*
 07/01/74-01/31/76 FY75: \$106,823 TOTAL: \$106,823
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Phinney, R. A. HQ-SM/Kosofsky, L. J. 32-Geological/Sci
 Dahlen, F. A. HQ-SM/Roberson, F. I.
 Jordan, T. H.
 (10-810 383-20-03)

NSG 7088 Princeton University 2686
 Study of a 36-inch telescope sounding rocket payload
Period *Obligations*
 07/01/74-08/31/75 FY75: \$30,000 TOTAL: \$30,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Schwartzchild, M. HQ-SG/Weldon, J. M. 11-Astronomy
 HQ-SG/Holtz, J. H.
 (10-850 879-11-00)

NSG 7131 Princeton University 2687
 Efficient research and technology program formulation under conditions of risk and uncertainty
Period *Obligations*
 05/01/75-04/30/76 FY75: \$89,000 TOTAL: \$89,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Graham, D. HQ-RX/Mullin, J. S. 99-Multi-Discip
 Greenberg, J. S. HQ-RX/Rollins, R. H.
 (10-701 791-40-10)

NSR 31-001-259 Princeton University 2688
 Study and evaluation of infrared sensitive image sensors for space astronomy
Period *Obligations*
 03/16/72-04/30/74 FY75: TOTAL: \$89,462
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Morton, D. C. HQ-SG/Sures, A. H. 11-Astronomy
 Lowrance, J. L. HQ-SG/Aucremagne, M. J.
 (10-850 188-00-00)

NSR 31-001-286 Princeton University 2689
 Research on small television tube for space astronomy
Period *Obligations*
 06/11/73-07/13/73 FY75: TOTAL: \$90,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Lowrance, J. L. GSFC/Bogges, A., III 11-Astronomy
 Spitzer, L., Jr.
 (10-850 188-00-00)

NSR 31-001-313 Princeton University 2690
 Economic analysis of solar system exploration space missions
Period *Obligations*
 08/08/73-08/07/74 FY75: \$1,475 TOTAL: \$51,269
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Layton, J. P. HQ-SL/Tarver, P. 42-Astro Engr
 Greenberg, J. S.
 Hazelrigg, G. A.
 (10-840 684-68-61)

NSR 31-001-901 Princeton University 2691
 Ultraviolet spectrographic investigations by high altitude rocket flights
Period *Obligations*
 06/30/67-06/30/75 FY75: TOTAL: \$1,494,196
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Lowrance, J. L. HQ-SG/Roman, N. G. 11-Astronomy
 Spitzer, L., Jr. HQ-SG/Ott, E. J.
 (10-850 831-00-00)

NGR 31-004-049 Rutgers University - Newark 2692
 Zodiacal light experiment of OSO-6
Period *Obligations*
 02/17/72-11/30/75 FY75: TOTAL: \$90,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Carroll, B. HQ-SG/Dubin, M. 13-Physics
 HQ-SG/Ashworth, C. D.
 (10-850 385-45-00)

NEW MEXICO

NGT 32-010-001 New Mexico Highlands University 2693
 The training of 4 undergraduate students in the space-related sciences and engineering
Period *Obligations*
 06/01/74-05/31/76 FY75: \$14,000 TOTAL: \$28,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Zenick, H. HQ-P/Pohly, J. G. 99-Multi-Discip
 HQ-U/Jenkins, H. G.
 (10-030 010-00-00)

**NASA'S UNIVERSITY PROGRAM
NEW MEXICO (Continued)**

NSG 804 **New Mexico Highlands University** **2694**
 Study of bicyclic and cage compounds

<i>Period</i>	<i>Obligations</i>	
01/01/75-01/01/76	FY75: \$16,417	TOTAL: \$16,417
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Clark, R. D.	KSC/Bryan, C. J.	12-Chemistry
	KSC/Gayle, J. B.	

(76-371 340-00-00)

NAS 5-20565 **New Mexico State University - Las Cruces** **2701**
 Minitrack antenna calibration

<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/75	FY75: \$76,583	TOTAL: \$86,583
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Henry, D. G.	GSFC/Lantz, P. A.	19-Phys Sci, NEC
Snow, L. L.	GSFC/Riffe, C. L.	

(51-500 311-20-20)

NAS 5-20916 **New Mexico Institute of Mining & Tech** **2695**
 ERTS data follow on investigation

<i>Period</i>	<i>Obligations</i>	
02/27/75-05/27/76	FY75: \$19,784	TOTAL: \$19,784
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Vander Linden	GSFC/Broderick, J.	32-Geological Sci

(51-680 641-15-00)

NAS 5-20681 **New Mexico State University - Las Cruces** **2702**
 Field and analytical engineering support of the sounding rocket program

<i>Period</i>	<i>Obligations</i>	
07/26/74-01/31/77	FY75: \$735,000	TOTAL: \$735,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sayles, A., Jr.	GSFC/Bissell, E. E., Jr.	19-Phys Sci, NEC
	GSFC/Conrad, R. W.	

(51-850 879-21-00) (51-680 607-12-00)

NCA 5-30 **New Mexico Institute of Mining & Tech** **2696**
 Joint observations for cometary research

<i>Period</i>	<i>Obligations</i>	
08/05/74-12/31/74	FY75: \$2,000	TOTAL: \$2,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Whipple, F. L.	GSFC/Maran, S. O.	11-Astronomy

(51-840 196-41-52)

NAS 9-95435 **New Mexico State University - Las Cruces** **2703**
 Definition of a radiometer calibration facility

<i>Period</i>	<i>Obligations</i>	
05/24/74-08/31/74	FY75:	TOTAL: \$30,045
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Henry, D. G.	JSC/Fenner, R. G.	39-Env Sci, NEC

(72-680 640-00-00)

NCA 5-43 **New Mexico Institute of Mining & Tech** **2697**
 Maintenance of joint observatory for cometary research

<i>Period</i>	<i>Obligations</i>	
12/01/74-11/30/75	FY75: \$6,000	TOTAL: \$6,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hume, W.	GSFC/Maran, S. P.	11-Astronomy

(51-840 196-41-52) (51-850 188-38-53)

NAS 9-95451 **New Mexico State University - Las Cruces** **2704**
 Set up and operate a radiometer calibration facility

<i>Period</i>	<i>Obligations</i>	
10/01/74-06/16/75	FY75: \$92,432	TOTAL: \$92,432
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Henry, D. G.	JSC/Fenner, R. G.	39-Env Sci, NEC

(72-680 640-04-04)

NCA 5-48 **New Mexico Institute of Mining & Tech** **2698**
 Use of multichannel spectrometer for solar research

<i>Period</i>	<i>Obligations</i>	
05/23/75-12/31/75	FY75: \$1,950	TOTAL: \$1,950
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hume, W.	GSFC/Maran, S. P.	19-Phys Sci, NEC

(51-850 385-38-00)

NAS10-7399 **New Mexico State University - Las Cruces** **2705**
 Telemetry research & development in telemetry field services in support of unmanned launch operations

<i>Period</i>	<i>Obligations</i>	
12/02/70-12/01/74	FY75: \$79,514	TOTAL: \$1,665,514
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bumgarner, R. A.	KSC/Schlimmer, G. E.	45-Elec Engr
Noda, T. T.	KSC/MacKey, A. J.	

(76-830 492-22-00) (76-950 954-55-00)

NAS 1-13586 **New Mexico State University - Las Cruces** **2699**
 Operation of a two-station meteor patrol

<i>Period</i>	<i>Obligations</i>	
09/01/74-06/30/76	FY75: \$42,247	TOTAL: \$42,247
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Beebe, R.	LARC/Harvey, G. A.	11-Astronomy

(23-704 502-21-29) (23-704 506-16-36) (23-850 188-45-52)

NAS10-8712 **New Mexico State University - Las Cruces** **2706**
 Research, development, and technical operations support

<i>Period</i>	<i>Obligations</i>	
12/02/74-12/01/76	FY75: \$190,000	TOTAL: \$190,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	KSC/Unavailable	19-Phys Sci, NEC

(76-830 492-22-00)

NAS 2-8496 **New Mexico State University - Las Cruces** **2700**
 Solar pointing Aerobee rocket system launch support.

<i>Period</i>	<i>Obligations</i>	
08/01/74-07/31/77	FY75: \$166,800	TOTAL: \$166,800
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lawrence, D. H.	ARC/Van Ess, J. C.	99-Multi-Discip
Thomason, S.	ARC/Chisel, D. M.	

(21-850 879-40-00)

NGL 32-003-001 **New Mexico State University - Las Cruces** **2707**
 Photographic patrol and study of physical conditions on the moon and planets

<i>Period</i>	<i>Obligations</i>	
04/15/61-04/14/77	FY75: \$19,000	TOTAL: \$1,693,047
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Beebe, R. F.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Fellows, R. F.	

(10-840 196-41-80) (10-840 185-00-00)

**NASA'S UNIVERSITY PROGRAM
NEW MEXICO (Continued)**

NGL 32-003-069 New Mexico State University - Las Cruces 2708
X-ray crystal reflectivity measurements

<i>Period</i>	<i>Obligations</i>	
05/01/72-05/31/75	FY75:	TOTAL: \$13,203
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Liefeld, R. J.	HQ-SG/Roman, N. G.	11-Astronomy
(10-850 188-00-00)		

NGR 32-003-075 New Mexico State University - Las Cruces 2709
Evaluation of Martian dust storm statistics

<i>Period</i>	<i>Obligations</i>	
09/01/73-11/30/74	FY75:	TOTAL: \$30,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Smith, B. A.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Allingham, J. W.	
(10-840 384-50-80)		

NGR 32-003-076 New Mexico State University - Las Cruces 2710
Analysis of scattering properties of dust in the Martian atmosphere

<i>Period</i>	<i>Obligations</i>	
07/01/73-08/30/74	FY75:	TOTAL: \$28,934
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Smith, B. A.	HQ-SL/Fellows, R. F.	31-Atmos Sci
(10-840 384-47-81)		

NGT 32-003-750 New Mexico State University - Las Cruces 2711
Training of predoctoral graduate students in space-related sciences and engineering

<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$7,000	TOTAL: \$7,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Zimmerman, R. M.	HQ-P/Pohly, J. G.	49-Engr, NEC
(10-030 010-00-00)		

NSG 3069 New Mexico State University - Las Cruces 2712
Interferogram analysis of periodic spectra

<i>Period</i>	<i>Obligations</i>	
05/15/75-05/14/77	FY75: \$73,316	TOTAL: \$73,316
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Armstrong, R. L.	LERC/Salzman, J. A.	13-Physics
(22-702 505-03-41)		

NAS 1-11855 University of New Mexico 2713
Participation in science planning for Viking 1975 missions in area of inorganic chemistry

<i>Period</i>	<i>Obligations</i>	
08/18/72-03/31/77	FY75: \$2,035	TOTAL: \$27,535
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Keil, K.	LARC/Williams, T. S., Jr.	12-Chemistry
	LARC/Glenny, W. R.	
(23-840 815-20-00)		

NAS 3-18522 University of New Mexico 2714
Technical search and processing of abstracts into documents for five specific fields of energy

<i>Period</i>	<i>Obligations</i>	
05/16/74-08/15/75	FY75:	TOTAL: \$15,522
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Long, W. W.	LERC/Hyland, R. F.	49-Engr, NEC
(22-702 770-18-01)		

NAS 3-19434 University of New Mexico 2715
Technical search and processing of abstracts into documents for eight specific fields of energy

<i>Period</i>	<i>Obligations</i>	
05/08/75-10/07/76	FY75: \$31,000	TOTAL: \$31,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Shinnick, W. A.	LERC/Hyland, R. F.	49-Engr, NEC
(22-702 770-18-01)		

NASW 2399 University of New Mexico 2716
Operation of a regional dissemination center in the technology application center

<i>Period</i>	<i>Obligations</i>	
09/22/72-06/01/74	FY75: \$75,000	TOTAL: \$485,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Shinnick, W. A.	HQ-KT/Holley, H. L.	99-Multi-Discip
(10-250 141-93-01)	(10-250 141-00-00)	

NASW 2633 University of New Mexico 2717
Operation of the technology application center

<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/75	FY75: \$299,000	TOTAL: \$299,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	HQ-KT/Bivins, R. G.	99-Multi-Discip
(10-250 141-93-01)		

NCA 2-10502 University of New Mexico 2718
Control mechanism of metabolism during poikilothermia

<i>Period</i>	<i>Obligations</i>	
01/01/75-12/31/75	FY75: \$1,900	TOTAL: \$1,900
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Riedesel, M. L.	ARC/Zill, L. P.	51-Biology
(21-970 970-21-14)		

NCA 5-31 University of New Mexico 2719
Research on comets

<i>Period</i>	<i>Obligations</i>	
09/16/74-12/31/75	FY75: \$4,457	TOTAL: \$4,457
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Regener, V. H.	GSFC/Hyder, C. L.	31-Atmos Sci
(51-840 196-41-52)		

NCA 5-32 University of New Mexico 2720
Research on solar phenomena

<i>Period</i>	<i>Obligations</i>	
09/16/74-09/30/75	FY75: \$2,800	TOTAL: \$2,800
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Regener, V. H.	GSFC/Jones, H. P.	31-Atmos Sci
(51-850 385-38-00)		

NCA 5-33 University of New Mexico 2721
Research on the solar magnetic field

<i>Period</i>	<i>Obligations</i>	
09/16/74-12/31/75	FY75: \$3,200	TOTAL: \$3,200
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Regener, V. H.	GSFC/Hyder, C. L.	31-Atmos Sci
(51-850 188-38-52)		

**NASA'S UNIVERSITY PROGRAM
NEW MEXICO (Continued)**

NCA 5-34	University of New Mexico	2722	NGR 32-004-026	University of New Mexico	2729
Research on hydromagnetic phenomena in comet tails			Numerical study of the flow in the vortex rate sensor		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
09/16/74-12/31/75	FY75: \$3,000	TOTAL: \$3,000	05/27/66-12/31/75	FY75:	TOTAL: \$75,918
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Regener, V. H.	GSFC/Hyder, C. L.	31-Atmos Sci	Richards, C. G.	LARC/Hellbaum, R. F.	46-Mech Engr
(51-850 188-38-52)			(23-760 126-00-00)	(23-750 125-00-00)	
NCA 5-36	University of New Mexico	2723	NGR 32-004-062	University of New Mexico	2730
Research of photoelectric photometry of the visible counterparts of celestial X-ray sources			Search for evidence of dynamic process		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
12/15/74-12/31/75	FY75: \$20,000	TOTAL: \$20,000	06/22/70-11/30/75	FY75: \$20,000	TOTAL: \$110,250
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	GSFC/Unavailable	31-Atmos Sci	Elston, W. E.	HQ-SL/Dwornik, S. E.	32-Geological Sci
(51-850 385-38-00)			(10-840 384-50-80)	HQ-SL/Holt, H. E.	
NCA 5-41	University of New Mexico	2724	NGR 32-004-068	University of New Mexico	2731
Theoretical study of two excited electronic states of hydrogen molecular ion H ₂ ⁺			Thermal radiation from interplanetary dust		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
02/17/75-07/15/75	FY75: \$7,000	TOTAL: \$7,000	12/15/71-07/31/75	FY75: \$24,810	TOTAL: \$75,810
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Beckel, C. L.	GSFC/Temkin, A.	13-Physics	Peterson, A. W.	HQ-SG/Dubin, M.	11-Astronomy
(51-850 188-48-52)			(10-850 188-45-51)	HQ-SG/Bogges, N. W.	
NGL 32-004-011	University of New Mexico	2725	NGR 32-004-086	University of New Mexico	2732
Comparative study of lunar craters and terrestrial volcano-tectonic depressions in rhyolite ash-flow plateaus			Correlation between interplanetary magnetic field, solar wind, and cosmos		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
10/12/64-05/31/77	FY75: \$14,920	TOTAL: \$395,800	08/15/73-08/14/75	FY75:	TOTAL: \$20,560
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Elston, W. E.	HQ-SM/Hanley, J. B.	32-Geological Sci	Ahluwalia, H. S.	HQ-SG/Calahan, H. D.	13-Physics
(10-810 195-42-64)	HQ-SM/Roberson, F. I.	(10-840 185-00-00)	(10-850 385-36-00)		
NGL 32-004-042	University of New Mexico	2726	NGT 32-004-750	University of New Mexico	2733
The proof-of-concept approach to the design and management of public policy problems			Training of predoctoral graduate students in space-related sciences and engineering		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
02/19/68-06/30/75	FY75:	TOTAL: \$470,400	06/01/75-05/31/76	FY75: \$7,000	TOTAL: \$7,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rosenthal, A. H.	HQ-P/Morris, J. D.	75-Political Sci	Theye, L. A.	HQ-P/Pohly, J. G.	49-Engr, NEC
(10-371 340-00-00)	(10-370 183-00-00)		(10-030 010-00-00)		
NGL 32-004-063	University of New Mexico	2727	NSG 2052	University of New Mexico	2734
Lunar sample analysis			Photography study of infrared airglow from C-990 airborne laboratory during space shuttle simulation		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/06/71-01/31/78	FY75: \$96,640	TOTAL: \$513,785	10/15/74-10/15/75	FY75: \$30,500	TOTAL: \$30,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Keil, K.	JSC/Harris, J. W.	12-Chemistry	Peterson, A. W.	ARC/Haughney, L. C.	31-Atmos Sci
(72-810 388-10-01)			Kieffaber, L. M.	ARC/Neel, C. B.	
			(21-850 352-02-02)	(21-980 975-50-01)	
NGL 32-004-064	University of New Mexico	2728	NSG 2064	University of New Mexico	2735
Mineralogy and chemistry of polymict-brecciated stone meteorites			Research into the performance limits in axial groove heat pipes		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/14/71-05/31/77	FY75: \$54,829	TOTAL: \$234,192	01/20/75-01/19/76	FY75: \$14,740	TOTAL: \$14,740
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Keil, K.	HQ-SM/Hanley, J. B.	32-Geological Sci	Feldman, K. T., Jr.	ARC/Kirkpatrick, J. P.	13-Physics
(10-810 195-42-67)	HQ-SM/Roberson, F. I.	(10-810 383-09-57)	(21-704 506-16-31)		

**NASA'S UNIVERSITY PROGRAM
NEW MEXICO (Continued)**

NSG 7066 University of New Mexico 2736
Geologic interpretation of lunar photography
Period *Obligations*
06/01/74-01/31/76 FY75: \$11,690 TOTAL: \$11,690
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Elston, W. E. HQ-SM/Hanley, J. B. 32-Geological Sci
HQ-SM/Roberson, F. I.
(10-810 383-20-02)

NEW YORK

NASW 2504 Alfred University 2737
Joint sponsorship of Conference on Surfaces and Interfaces of
Glass and Ceramics
Period *Obligations*
07/03/73-04/30/74 FY75: TOTAL: \$3,314
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Frechette, V. D. HQ-RW/Gangler, J. J. 47-Materials Engr
(10-704 502-00-00)

NSG 1166 Brooklyn College 2738
Theoretical studies in medium and high-energy atomic physics
Period *Obligations*
06/16/75-06/15/76 FY75: \$20,000 TOTAL: \$20,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Franco, V. LARC/Wilson, J. W. 13-Physics
(23-704 506-90-21)

NAS 5-20041 City College of New York 2739
Global wave forecasting methodology
Period *Obligations*
02/22/74-03/22/75 FY75: TOTAL: \$30,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pierson, W. J. GSFC/Eckerman, J. 33-Oceanography
Greenwood, J. A.
Salfi, R.
(51-630 161-03-02)

NAS 5-22392 City College of New York 2740
Numerical models of ocean circulation
Period *Obligations*
06/27/75-06/26/76 FY75: \$24,000 TOTAL: \$24,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pierson, W. J. GSFC/Mueller, J. L. 33-Oceanography
(51-630 161-03-01) (51-630 161-03-02)

NAS 6-2439 City College of New York 2741
GEOS-C research study
Period *Obligations*
02/04/74-01/31/76 FY75: \$45,300 TOTAL: \$57,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pierson, W. J. WFC/Rossi, L. C. 32-Geological Sci
(53-630 855-33-00) (53-630 855-00-00)

NAS 8-29616 City College of New York 2742
Study of eastern test range ocean wave statistics for space shuttle
booster design and recovery operations
Period *Obligations*
06/05/73-04/01/74 FY75: TOTAL: \$10,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pierson, W. J. MSFC/Brown, S. C. 33-Oceanography
(62-920 976-00-00)

NAS 9-13642 City College of New York 2743
Joint meteorological, oceanographic and sensor evaluation
program. Skylab experiment S-193
Period *Obligations*
07/01/73-06/30/76 FY75: \$215,657 TOTAL: \$363,597
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pierson, W. J. JSC/Byrns, Z. H. 13-Physics
(72-680 652-01-84) (72-960 948-63-84)

NAS 9-13940 City College of New York 2744
Communication systems analysis study
Period *Obligations*
04/04/74-04/15/76 FY75: \$30,000 TOTAL: \$129,892
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schilling, D. L. JSC/Batson, B. H. 45-Elec Engr
Scheinberg, N. JSC/Dawson, C. T.
Cicero, J. L.
(72-980 909-44-29)

NGL 33-013-029 City College of New York 2745
Effect of particle and fluid properties on heat transfer coefficient
and pressure drop of a dilute flowing gas solid suspension
Period *Obligations*
10/04/67-07/31/74 FY75: TOTAL: \$49,124
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pfeffer, R. LERC/Putre, H. 13-Physics
(22-720 122-00-00)

NGL 33-013-034 City College of New York 2746
Investigations of electromagnetics and statistical dynamics as
applied to plasma propulsion
Period *Obligations*
03/22/68-07/31/75 FY75: TOTAL: \$80,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tchen, C. M. HQ-NS/Thom, K. 13-Physics
(10-740 129-00-00)

NGL 33-013-040 City College of New York 2747
Theoretical research in astrophysics and astronomy
Period *Obligations*
04/23/69-09/30/77 FY75: \$20,000 TOTAL: \$314,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Erlbach, E. GSFC/Stothers, R. B. 11-Astronomy
(51-850 405-02-02) (51-840 404-02-02)

NGR 33-013-077 City College of New York 2748
Optimal space communications techniques
Period *Obligations*
01/22/73-01/21/74 FY75: TOTAL: \$35,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schilling, D. L. GSFC/Brown, J. P. 45-Elec Engr
(51-620 164-00-00)

NGR 33-013-086 City College of New York 2749
Models for large scale meteorological prediction experiments
Period *Obligations*
10/01/73-10/31/75 FY75: \$46,976 TOTAL: \$91,976
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Spar, J. GSFC/Halem, M. 31-Atmos Sci
(51-680 175-11-44) (51-680 408-02-02)

**NASA'S UNIVERSITY PROGRAM
NEW YORK (Continued)**

NSG 1169 City College of New York 2750
An adaptive learning control system for aircraft
Period *Obligations*
05/01/75-04/30/76 FY75: \$34,817 TOTAL: \$34,817
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mekel, R. LARC/Montgomery, R.C. 41-Aero Engr
(23-702 723-01-01)

NSG 5013 City College of New York 2751
Efficient processing of video signals
Period *Obligations*
06/15/74-08/14/76 FY75: TOTAL: \$35,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schilling, D. L. GSFC/Miller, J. E. 45-Elec Engr
GSFC/Brown, J.
(51-620 643-10-01)

NSG 7144 City College of New York 2752
Applications of satellite technology for regional organizations
Period *Obligations*
06/11/75-09/30/75 FY75: \$100,000 TOTAL: \$100,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schilling, D. L. HQ-ET/Ermst, H. M. 75-Political Sci

NSG 7028 City Univ of Ny - Grad School & Univ Cen 2753
A statistical chemical and thermodynamic approach to the study of lunar rocks
Period *Obligations*
01/01/74-07/31/75 FY75: TOTAL: \$17,786
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Saxena, S. K. HQ-SM/Kosofsky, L.J. 32-Geological Sci
HQ-SM/Roberson, F. I.
(10-810 383-20-04)

NSG 2059 Clarkson College of Technology 2754
Inhibition of hydrogen cyanide (hcn) evolution by copper from linear polyurethane
Period *Obligations*
02/01/75-01/31/76 FY75: \$25,000 TOTAL: \$25,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jellinek, H. H. ARC/Lerner, N. R. 12-Chemistry
ARC/Parker, J. A.
(21-702 505-01-31)

NAS 1-13663 Columbia University 2755
Analysis of data applicable to community noise and annoyance research
Period *Obligations*
10/30/74-06/13/75 FY75: \$51,202 TOTAL: \$51,202
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Borsky, P. N. LARC/Shepherd, W. T. 62-Social Aspects
Bryant, J. H.
(23-704 504-09-11)

NAS 5-11362 Columbia University 2756
OSO-I wheel experiment hardware
Period *Obligations*
01/28/71-08/31/75 FY75: \$121,468 TOTAL: \$2,700,468
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Novick, R. GSFC/Donley, J. L. 11-Astronomy
Weisskopf, M. C. GSFC/Borrowbridge, D. R.
Wolff, R. S.
(51-850 821-32-00)

NAS 5-22311 Columbia University 2757
Technical service operations and materials for cataloging books and other material
Period *Obligations*
03/14/75-03/14/76 FY75: \$59,459 TOTAL: \$59,459
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Fountain, T. D. GSFC/Guntharp, P. A. 99-Multi-Discip
(51-680 611-13-00)

NAS 5-22341 Columbia University 2758
Solar maximum measurement experiment
Period *Obligations*
05/06/75-09/05/75 FY75: \$53,300 TOTAL: \$53,300
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Novick, R. GSFC/Donley, J. L. 11-Astronomy
Wolff, R. S.
(51-850 826-12-00)

NAS 5-22408 Columbia University 2759
Reduction and analysis of data from OSO-I graphite crystal X-ray spectrometer and polarimeter experiment
Period *Obligations*
06/26/75-06/25/77 FY75: \$100,000 TOTAL: \$100,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Novick, R. GSFC/White, R. A. 31-Atmos Sci
(51-850 821-32-00)

NAS 6-2455 Columbia University 2760
Mapping of ocean tides using GEOS-C data
Period *Obligations*
03/15/74-03/14/76 FY75: \$30,000 TOTAL: \$60,900
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kuo, J. T. WFC/Stanley, H. R. 33-Oceanography
Jachens, R. C. WFC/Rossi, L. C.
(53-630 369-07-01) (53-630 369-00-00)

NAS 6-2519 Columbia University 2761
GEOS-C research
Period *Obligations*
10/16/74-10/31/77 FY75: \$89,600 TOTAL: \$89,600
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Talwani, M. WFC/Stanley, H. R. 32-Geological Sci
Watts, A. WFC/Rossi, L. C.
(53-630 369-07-01)

NAS 8-30532 Columbia University 2762
Participation in HEAO mission B definition
Period *Obligations*
11/29/73-05/31/74 FY75: TOTAL: \$15,088
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Novick, R. MSFC/Manning, H. S. 11-Astronomy
MSFC/Powers, J.
(62-850 832-00-00)

NAS 8-30753 Columbia University 2763
Design, development and operation of the HEAO mission B X-ray telescope experiment
Period *Obligations*
06/01/74-12/31/79 FY75: \$35,000 TOTAL: \$35,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Novick, R. MSFC/Manning, H. S. 11-Astronomy
Angel, J. R. MSFC/Power, J. A.
Kestenbaum, H. L.
(62-850 832-12-00)

**NASA'S UNIVERSITY PROGRAM
NEW YORK (Continued)**

NAS 9-6037 Columbia University 2764
Heat flow experiment for ALSEP
Period *Obligations*
06/06/66-12/31/75 FY75: \$38,303 TOTAL: \$1,439,275
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Langseth, M. G. JSC/Eichelman, W. F. 19-Phys Sci, NEC
(72-810 383-31-00) (72-810 383-25-03)

NGL 33-008-090 Columbia University 2765
Systems approach to device circuit interaction in electrical power processing
Period *Obligations*
06/20/67-03/01/74 FY75: TOTAL: \$214,080
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Stern, T. LERC/Lalli, V. R. 45-Elec Engr
(25-710 120-00-00) (22-710 120-00-00)

NGL 33-008-118 Columbia University 2766
Reactions of people to aircraft noise & sonic booms
Period *Obligations*
04/04/69-10/31/74 FY75: TOTAL: \$700,415
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Borsky, P. N. LARC/Shepherd, W. T.
(23-770 127-00-00) (23-704 501-29-11) (23-770 137-00-00) 62-Social Aspects

NGR 33-008-102 Columbia University 2767
Research in X-ray astronomy
Period *Obligations*
01/30/68-12/31/75 FY75: \$100,000 TOTAL: \$1,148,840
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Novick, R. HQ-SG/Lazarus, A. J. 11-Astronomy
Angel, J. R. HQ-SG/Opp, A. G.
(10-850 879-11-00) (10-850 188-41-59)

NGR 33-008-146 Columbia University 2768
Study of strain buildup, release and earthquake prediction
Period *Obligations*
02/09/71-08/31/76 FY75: \$78,939 TOTAL: \$226,319
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Scholz, C. H. GSFC/Smith, D. E. 19-Phys Sci, NEC
Johnson, T. L.
(51-630 653-00-00) (51-630 161-02-01)

NGR 33-008-168 Columbia University 2769
Economic impact of the NASA program
Period *Obligations*
09/21/71-08/31/75 FY75: \$3,000 TOTAL: \$74,850
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ginzberg, E. HQ-P/Morris, J. D. 72-Economics
Schnee, J. E. HQ-P/Hansing, F. D.
(10-371 340-00-00)

NGR 33-008-169 Columbia University 2770
Lunar sample analysis
Period *Obligations*
11/01/72-01/31/76 FY75: \$23,635 TOTAL: \$66,545
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Horai, K. JSC/Harris, J. W. 13-Physics
(72-810 388-10-03)

NGR 33-008-177 Columbia University 2771
Lunar sample analysis
Period *Obligations*
11/01/72-01/31/76 FY75: \$17,845 TOTAL: \$43,535
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Horai, K. JSC/Harris, J. W. 13-Physics
(72-810 388-10-03) (72-910 914-40-00)

NGR 33-008-183 Columbia University 2772
Study of nonequilibrium conditions in active regions during solar flares
Period *Obligations*
07/01/73-10/31/75 FY75: TOTAL: \$25,259
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wolff, R. S. HQ-SG/Calahan, H. D. 11-Astronomy
(10-850 385-38-00)

NGR 33-008-189 Columbia University 2773
Study of X-ray polarization of solar flares
Period *Obligations*
09/01/73-11/30/75 FY75: TOTAL: \$25,287
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wolff, R. S. HQ-SG/Oertel, G. K. 11-Astronomy
(10-850 385-38-00)

NGR 33-008-191 Columbia University 2774
Multidisciplinary research in the space sciences
Period *Obligations*
02/15/73-03/01/76 FY75: \$430,000 TOTAL: \$1,237,519
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hartmann, S. R. GSFC/Thaddeus, P. 11-Astronomy
Broecker, W. S. GSFC/Somerville, R. C.
(51-680 175-11-44) (51-680 611-13-00) (51-680 408-02-02)

NGR 33-008-194 Columbia University 2775
Detailed studies of the nonperiodic time variability of several galactic X-ray sources
Period *Obligations*
11/01/73-03/31/75 FY75: TOTAL: \$20,500
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Weisskopf, M. C. HQ-SG/Roman, N. G. 11-Astronomy
(10-850 385-41-00)

NGR 33-008-199 Columbia University 2776
Petrological study of lithic clasts in Apollo 14 breccias: determination of bulk chemistry and mineralogy as constraints on highlands petrogenesis and evolution
Period *Obligations*
02/01/74-01/31/76 FY75: \$47,167 TOTAL: \$80,622
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ridley, W. I. JSC/Harris, J. W. 12-Chemistry
(72-810 388-10-01)

NGR 33-008-200 Columbia University 2777
Analysis and interpretation of rocket X-ray polarimetric data for solar X-ray astronomy
Period *Obligations*
10/01/73-03/31/75 FY75: TOTAL: \$24,860
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Novick, R. HQ-SG/Oertel, G. K. 11-Astronomy
(10-850 385-38-00)

**NASA'S UNIVERSITY PROGRAM
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NSG 1059 Columbia University 2778
Structural response of reusable surface insulation panels of space shuttle to random pressure fields

<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/76	FY75: \$17,384	TOTAL: \$25,393
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Vaicaitis, R. (23-702 505-02-21)	LARC/Mixson, J. S.	41-Aero Engr

NSG 1115 Columbia University 2779
Effects of aircraft noise on human response

<i>Period</i>	<i>Obligations</i>	
10/01/74-07/31/76	FY75: \$39,880	TOTAL: \$39,880
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Galanter, E. Perera, T. B. (23-704 504-09-11)	LARC/Gunn, W. J.	69-Psych, NEC

NSG 1164 Columbia University 2780
Study of community annoyance with aircraft noise in the vicinity of JFK airport

<i>Period</i>	<i>Obligations</i>	
04/01/75-12/31/75	FY75: \$130,634	TOTAL: \$130,634
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Borsky, P. N. (23-704 504-09-11)	LARC/Powell, C. A.	69-Psych, NEC

NSG 3050 Columbia University 2781
Creep and stress rupture behavior of oxide dispersion strengthened super alloys

<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$35,518	TOTAL: \$35,518
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tien, J. K. (22-702 505-01-11)	LERC/Glasgow, T.K.	47-Materials Engr
	LERC/Quatinetz, M.	

NSG 7075 Columbia University 2782
Solar X-ray polarimetry

<i>Period</i>	<i>Obligations</i>	
07/01/74-12/31/75	FY75: \$123,000	TOTAL: \$123,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Novick, R. (10-850 188-38-64)	HQ-SG/Weldon, J. M.	11-Astronomy
	HQ-SG/Jordan, S. D.	

NSG 7105 Columbia University 2783
Calculation of collision cross sections of astrophysical interest

<i>Period</i>	<i>Obligations</i>	
12/01/74-11/30/75	FY75: \$35,000	TOTAL: \$35,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Zare, R. N. Green, S. (10-850 188-41-55)	HQ-SG/Bogges, N. W.	11-Astronomy
	HQ-SG/Roman, N. G.	

NSG 9025 Columbia University 2784
An inquiry into the low seismic attenuation of lunar crust

<i>Period</i>	<i>Obligations</i>	
02/01/75-01/31/76	FY75: \$30,100	TOTAL: \$30,100
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Schreiber, E. (72-810 388-10-03)	JSC/Harris, J. W.	32-Geological Sci

NAS 1-9683 Cornell University 2785
Participation in the science planning for the Viking 1975 missions in the area of imaging

<i>Period</i>	<i>Obligations</i>	
04/08/70-03/31/77	FY75: \$36,026	TOTAL: \$205,439
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sagan, C. E. (23-840 815-20-00)	LARC/Williams, T. S., Jr.	99-Multi-Discip
	LARC/Glenny, W. R.	

NAS 2-7846 Cornell University 2786
Study on cells and embryogenesis in space

<i>Period</i>	<i>Obligations</i>	
09/01/73-08/31/75	FY75: \$59,394	TOTAL: \$91,694
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Steward, F. C. Krikorian, A. D. (21-970 970-24-01)	ARC/Tremor, J. W.	51-Biology
	(21-970 970-24-04)	(21-970 970-21-62)

NAS 2-8706 Cornell University 2787
100 micron detector development program

<i>Period</i>	<i>Obligations</i>	
01/02/75-12/31/75	FY75: \$14,000	TOTAL: \$14,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Houck, J. R. (21-850 352-02-03)	ARC/Erickson, E. F.	11-Astronomy
	ARC/Witteborn, F. C.	

NAS 5-20705 Cornell University 2788
Theoretical investigation for atmospheric Explorer C, D & E missions

<i>Period</i>	<i>Obligations</i>	
08/19/74-06/30/76	FY75: \$40,000	TOTAL: \$40,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Walker, J. C. (51-850 852-22-00)	GSFC/Findlay, J. A.	13-Physics

NAS 5-21844 Cornell University 2789
Engineering analysis of ERTS data for Southeast Asian agriculture

<i>Period</i>	<i>Obligations</i>	
10/02/72-11/08/74	FY75:	TOTAL: \$100,986
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McNair, A. J. (51-680 641-00-00)	GSFC/Freden, S. C.	59-Life Sci, NEC

NAS 5-23236 Cornell University 2790
Feasibility study for infrared interferometer, spectrometer, & radiometer for Mariner/Jupiter 1977 launch

<i>Period</i>	<i>Obligations</i>	
05/01/73-06/30/77	FY75: \$8,000	TOTAL: \$16,300
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gierasch, P. J. (51-840 802-31-00)	GSFC/Conrath, B. J.	13-Physics
	GSFC/Hanel, R. A.	
	(51-840 802-00-00)	

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NAS 8-31513	Cornell University	2791			
Separation of lymphocytes by electrophoresis under terrestrial conditions and at zero gravity					
<i>Period</i>	<i>Obligations</i>				
06/05/75-01/05/76	FY75: \$12,000	TOTAL: \$12,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Rubin, A. L.	MSFC/Allen, R. E.	99-Multi-Discip			
Stenzel, K. H.	MSFC/Ives, R. E.				
(62-630 179-13-11)					
NAS 9-13364	Cornell University	2792			
Evaluation of satellite imagery & an information service for inventorying land use & natural resources					
<i>Period</i>	<i>Obligations</i>				
04/24/73-09/15/75	FY75: \$59,913	TOTAL: \$115,913			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Hardy, E. E.	JSC/Joosten, R. E.	39-Env Sci, NEC			
(72-960 948-63-85)	(72-680 652-01-85)				
NASW 2445	Cornell University	2793			
Development of control elements for an unmanned Martian roving vehicle					
<i>Period</i>	<i>Obligations</i>				
12/11/72-06/30/73	FY75:	TOTAL: \$92,572			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Unavailable	HQ-SL/Raring, R. H.	32-Geological Sci			
(10-840 186-00-00)					
NASW 2573	Cornell University	2794			
Control elements for an unmanned Martian roving vehicle					
<i>Period</i>	<i>Obligations</i>				
09/01/73-11/30/74	FY75:	TOTAL: \$89,800			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Wehe, R. L.	HQ-SL/Tarver, P.	49-Engr, NEC			
	HQ-SL/Herman, D. H.				
(10-840 186-68-55)	(10-840 186-00-00)				
NASW 2750	Cornell University	2795			
Control elements for an unmanned Martian roving vehicle					
<i>Period</i>	<i>Obligations</i>				
09/01/74-08/31/75	FY75: \$80,000	TOTAL: \$80,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Wehe, R. L.	HQ-SL/Tarver, P.	49-Engr, NEC			
Osborn, R. E.	HQ-SL/Herman, D. H.				
(10-840 186-68-55)					
NGL 33-010-005	Cornell University	2796			
Studies of lunar surface & solar atmosphere in vicinity of the moon					
<i>Period</i>	<i>Obligations</i>				
03/13/63-10/31/75	FY75:	TOTAL: \$1,623,508			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Gold, T.	HQ-SM/Bryson, R. P.	32-Geological Sci			
	HQ-SM/Roberson, F. I.				
(10-810 195-42-66)	(10-840 185-00-00)				
NGL 33-010-057	Cornell University	2797			
Sonic boom phenomena					
<i>Period</i>	<i>Obligations</i>				
09/06/67-12/31/75	FY75: \$11,986	TOTAL: \$138,154			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Wehausen, J. V.	ARC/Presley, L. L.	41-Aero Engr			
Yu, N. J.					
(21-702 505-06-11)	(10-740 129-00-00)				
NGL 33-010-064	Cornell University	2798			
Molecular energy transfer by fluid mixing					
<i>Period</i>	<i>Obligations</i>				
03/15/68-12/31/75	FY75: \$45,000	TOTAL: \$333,492			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Cool, T. A.	LARC/Allario, F.	31-Atmos Sci			
(23-704 506-25-55)	(23-704 503-10-01)				
NGL 33-010-070	Cornell University	2799			
Finite element shell instability analysis					
<i>Period</i>	<i>Obligations</i>				
12/16/68-06/30/75	FY75:	TOTAL: \$175,170			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Gallagher, R. H.	LARC/Stephens, W. B.	41-Aero Engr			
(23-760 126-00-00)					
NGL 33-010-082	Cornell University	2800			
Study of lunar and planetary surfaces and atmospheres					
<i>Period</i>	<i>Obligations</i>				
09/23/68-08/31/77	FY75: \$82,626	TOTAL: \$485,078			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Sagan, C. E.	HQ-SL/Fellows, R. F.	31-Atmos Sci			
	HQ-SL/Brunk, W. E.				
(10-840 185-47-81)					
NGL 33-010-171	Cornell University	2801			
A program in remote sensing					
<i>Period</i>	<i>Obligations</i>				
02/14/72-05/31/78	FY75: \$100,000	TOTAL: \$500,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Liang, T.	HQ-P/Vitale, J. A.	39-Env Sci, NEC			
(10-371 340-00-00)					
NGL 33-010-186	Cornell University	2802			
Studies of thermal structure and motion of planetary atmospheres					
<i>Period</i>	<i>Obligations</i>				
04/18/73-06/14/77	FY75: \$26,261	TOTAL: \$78,661			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Gierasch, P. J.	HQ-SL/Fellows, R. F.	31-Atmos Sci			
	HQ-SL/Brunk, W. E.				
(10-840 185-47-81)					
NGR 33-010-081	Cornell University	2803			
2 to 4 micron spectroscopy of Mars					
<i>Period</i>	<i>Obligations</i>				
03/01/73-09/01/75	FY75: \$32,376	TOTAL: \$75,897			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Houck, J. R.	ARC/Cameron, R. M.	11-Astronomy			
Sagan, C. E.	ARC/Gillespie, C. M., Jr.				
Pollack, J. B.					
(21-850 352-02-03)					
NGR 33-010-101	Cornell University	2804			
An integrated program in exobiology and problems related to origin of life					
<i>Period</i>	<i>Obligations</i>				
10/09/69-06/30/76	FY75: \$75,000	TOTAL: \$444,945			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Sagan, C. E.	HQ-SL/Young, R. S.	12-Chemistry			
Khare, B. N.					
(10-840 192-55-61)					

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NGR 33-010-108	Cornell University	2805	NGR 33-010-178	Cornell University	2812
Implications of convection within the moon			Analysis of Apollo 12 and Explorer 35 magnetometer data		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/18/70-12/31/75	FY75: \$30,829	TOTAL: \$91,396	06/13/72-02/29/76	FY75: \$46,000	TOTAL: \$87,693
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Turcotte, D. L.	HQ-SM/Kosofsky, L. J.	32-Geological Sci	Kuckes, A. F.	HQ-SM/Kosofsky, L. J.	32-Geological Sci
Burns, J. A.	HQ-SM/Roberson, F. I.			HQ-SM/Roberson, F. I.	
(10-810 195-20-02)	(10-810 383-20-03)		(10-810 383-20-03)	(10-810 383-09-56)	
NGR 33-010-127	Cornell University	2806	NGR 33-010-179	Cornell University	2813
Detection of soil microorganisms in situ by combined gas chromatography			Central neural mechanisms governing postural cardiovascular reflexes		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/02/70-11/30/74	FY75: TOTAL: \$108,632		05/25/72-06/14/76	FY75: \$43,000	TOTAL: \$173,760
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Duxbury, J. M.	HQ-SL/Geib, D. S.	51-Biology	Reis, D. J.	ARC/Sandler, H.	53-Other Medical
Alexander, M.			(21-970 970-21-12)	(21-970 970-21-00)	
(10-840 192-55-63)					
NGR 33-010-137	Cornell University	2807	NGR 33-010-182	Cornell University	2814
Lunar sample analysis			16 to 40 micron spectroscopy of Jupiter		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
02/12/71-01/31/76	FY75: \$24,213	TOTAL: \$188,313	12/20/72-09/01/75	FY75: \$40,000	TOTAL: \$102,318
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gold, T.	JSC/Harris, J. W.	13-Physics	Houck, J. R.	ARC/Cameron, R. M.	11-Astronomy
(72-810 388-10-03)			Pollack, J. B.	ARC/Mason, R. H.	
			(21-850 352-02-01)	(21-975 977-10-64)	(21-980 975-50-01)
NGR 33-010-145	Cornell University	2808	NGR 33-010-188	Cornell University	2815
Cosmic gamma-ray telescope			Astrophysical material science theory		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/06/71-01/31/76	FY75: \$10,000	TOTAL: \$258,300	08/01/72-06/30/76	FY75: \$36,000	TOTAL: \$104,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Greisen, K. I.	HQ-SG/Opp, A. G.	11-Astronomy	Krumhansl, J. A.	LERC/Brown, G. V.	13-Physics
	HQ-SG/Lazarus, A. J.		Ashcroft, N. W.		
(10-850 188-46-57)	(10-850 188-46-54)		(22-704 506-21-41)	(22-704 502-04-35)	
NGR 33-010-146	Cornell University	2809	NGR 33-010-189	Cornell University	2816
Submillimeter astronomical spectrometry from aircraft			Ultra pressure materials science		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
02/16/72-08/31/75	FY75: \$35,129	TOTAL: \$100,929	08/01/75-06/30/76	FY75: \$120,000	TOTAL: \$270,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harwit, M. O.	ARC/Cameron, R. M.	11-Astronomy	Ruoff, A. L.	LERC/Aron, P. R.	47-Materials Engr
	ARC/Mason, R. H.		Ashcroft, N. W.		
(21-850 352-02-01)			(22-704 506-21-41)	(22-704 502-04-35)	
NGR 33-010-161	Cornell University	2810	NGR 33-010-203	Cornell University	2817
Studies of the magnetospheres of Earth and Jupiter			Sonic boom research related to future air and space transportation systems		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/18/72-06/30/76	FY75: \$30,000	TOTAL: \$87,790	07/01/73-08/31/75	FY75: \$37,155	TOTAL: \$62,155
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Farley, D. T.	HQ-SL/Cauffman, D. P.	13-Physics	Seebass, A. R.	LARC/Barger, R. L.	41-Aero Engr
	HQ-SL/Fellows, R. F.		George, A. R.	LARC/Carlson, H. W.	
(10-850 188-00-00)			(23-702 743-04-31)	(23-702 760-65-11)	(23-702 760-66-01)
NGR 33-010-172	Cornell University	2811	NGR 33-010-210	Cornell University	2818
Research in a multiband far infrared surface with a balloon-borne telescope			High resolution 10-micron spectra at different planetary latitudes		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
11/20/72-08/19/75	FY75: \$49,998	TOTAL: \$144,517	09/01/73-08/31/75	FY75: \$31,827	TOTAL: \$60,518
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harwit, M. O.	HQ-SG/Bogges, N. W.	11-Astronomy	Harwit, M. O.	HQ-SL/Brunk, W. E.	11-Astronomy
Frederick, C. L.	HQ-SG/Roman, N. G.			HQ-SL/Fellows, R. F.	
(10-850 188-41-55)			(10-840 196-41-80)		

**NASA'S UNIVERSITY PROGRAM
NEW YORK (Continued)**

NGR 33-010-220 Cornell University 2819
Interdisciplinary investigations of Mariner 9 data
Period Obligations
12/05/73-06/30/75 FY75: \$67,000 TOTAL: \$134,000
Prin. Invest. NASA Tech. Officer CASE Category
Sagan, C. E. HQ-SL/Dwornik, S. E. 32-Geological Sci
Veverka, J. HQ-SL/Holt, H. E.
(10-840 384-50-80) (10-840 185-50-81)

NSG 2078 Cornell University 2820
Structural characterization of hydrogen attack
Period Obligations
04/01/75-03/31/76 FY75: \$32,259 TOTAL: \$32,259
Prin. Invest. NASA Tech. Officer CASE Category
Johnson, H. H. ARC/Nelson, H. G. 47-Materials Engr
(21-702 505-01-21)

NSG 3019 Cornell University 2821
Flow processes in combustors
Period Obligations
07/01/74-06/30/76 FY75: \$75,700 TOTAL: \$138,905
Prin. Invest. NASA Tech. Officer CASE Category
Gouldin, F. C. LERC/Marek, C. J. 41-Aero Engr
Leibovich, S.
Moore, F. K.
(22-702 505-04-31) (22-702 505-03-32)

NSG 5037 Cornell University 2822
Studies in support of the analysis of astronomical data from Apollo 16
Period Obligations
12/01/74-08/31/75 FY75: \$12,190 TOTAL: \$12,190
Prin. Invest. NASA Tech. Officer CASE Category
Greisen, K. I. GSFC/Trombka, J. I. 11-Astronomy
(51-810 195-22-06) (51-810 383-22-04)

NSG 5060 Cornell University 2823
Comparison between calculated gravity anomalies for dynamic processes in the mantle and observations
Period Obligations
04/01/75-10/31/75 FY75: \$17,000 TOTAL: \$17,000
Prin. Invest. NASA Tech. Officer CASE Category
Turcotte, D. L. GSFC/Smith, D. E. 32-Geological Sci
(51-630 161-02-03) (51-630 161-03-04) (51-630 369-02-01)

NSG 7104 Cornell University 2824
Theoretical studies of the ionosphere using satellite and ground bases
Period Obligations
11/25/74-11/30/75 FY75: \$25,000 TOTAL: \$25,000
Prin. Invest. NASA Tech. Officer CASE Category
Walker, J. C. HQ-SG/Berko, F. W. 13-Physics
HQ-SG/Schmerling, E. R.
(10-850 188-36-56)

NSG 7126 Cornell University 2825
High spatial resolution multicolor observation of Neptune during occultation by the moon
Period Obligations
01/01/75-01/31/76 FY75: \$39,428 TOTAL: \$39,428
Prin. Invest. NASA Tech. Officer CASE Category
Veverka, J. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SL/Fellows, R. F.
(10-840 196-41-80)

NSG 7135 Cornell University 2826
Comparative study of planetary bow shocks and magnetospheres
Period Obligations
05/31/75-05/31/76 FY75: \$10,000 TOTAL: \$10,000
Prin. Invest. NASA Tech. Officer CASE Category
Auer, P. L. HQ-SG/Berko, F. W. 13-Physics
HQ-SG/Schmerling, E. R.
(10-850 188-36-55)

NGR 33-192-001 Hamilton College 2827
Photographic interpretation of Mariner-Mars 6 and 7 photographs on the chaotic terrain
Period Obligations
04/23/70-05/31/75 FY75: \$1,391 TOTAL: \$41,821
Prin. Invest. NASA Tech. Officer CASE Category
Potter, D. B. HQ-SL/Dwornik, S. E. 32-Geological Sci
(10-840 384-50-80) (10-840 384-00-00)

NGR 33-209-002 Hofstra University 2828
Radar studies and application of measurements of ocean wave height and distinctive spectrum
Period Obligations
03/28/72-01/31/77 FY75: \$20,125 TOTAL: \$64,441
Prin. Invest. NASA Tech. Officer CASE Category
Weissman, D. E. LARC/Swift, C. T. 45-Elec Engr
(23-630 161-05-07)

NAS 9-13308 Long Island University 2829
In situ spectroradiometric calibration of EREP imagery and oceanography of block island sound Skylab EREP investigation 069/070
Period Obligations
04/10/73-05/31/75 FY75: \$10,000 TOTAL: \$68,925
Prin. Invest. NASA Tech. Officer CASE Category
Yost, E. JSC/York, L. B. 19-Phys Sci, NEC
(72-680 652-01-86) (72-960 948-00-00)

NGR 33-151-006 Long Island University 2830
Study of photographic techniques for transforming multispectral photographic imagery into geologic information
Period Obligations
12/01/72-02/28/74 FY75: TOTAL: \$5,191
Prin. Invest. NASA Tech. Officer CASE Category
Yost, E. GSFC/Jastrow, R. 32-Geological Sci
(51-680 408-00-00)

NGR 33-230-001 New York Institute of Technology 2831
Proposed novel techniques for interferometrically controlled ruling of improved large diffraction gratings
Period Obligations
10/16/72-10/01/73 FY75: TOTAL: \$68,970
Prin. Invest. NASA Tech. Officer CASE Category
Stroke, G. W. GSFC/Mangus, J. D. 19-Phys Sci, NEC
(51-850 188-00-00)

NAS 1-10090 New York University 2832
The composite radiometer-scatterometer (RADSCAT) experiment for ocean surface modeling and electromagnetic scattering
Period Obligations
06/08/70-06/30/74 FY75: TOTAL: \$117,000
Prin. Invest. NASA Tech. Officer CASE Category
Pierson, W. J., Jr. LARC/Jones, W. L. 99-Multi-Discip
(23-620 630-52-00) (23-620 630-00-00)

**NASA'S UNIVERSITY PROGRAM
NEW YORK (Continued)**

NAS 1-10282 New York University 2833
An experimental flight program designed to measure biologically significant radiation components at supersonic transport cruise altitude

<i>Period</i>	<i>Obligations</i>	
09/01/70-09/30/74	FY75:	TOTAL: \$317,702
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Korer, S. A.	LARC/Freeman, R. S.	31-Atmos Sci
(23-704 501-00-00)		

NAS 2-7963 New York University 2834
Pioneer F/G data analysis of zodiacal light experiment

<i>Period</i>	<i>Obligations</i>	
01/04/74-06/30/75	FY75: \$123,719	TOTAL: \$218,115
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Weinberg, J.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	
(21-840 811-22-00)	(21-840 811-00-00)	

NAS 5-20961 New York University 2835
Heavy modeling of an urbanized estuary

<i>Period</i>	<i>Obligations</i>	
02/24/75-03/24/76	FY75: \$16,351	TOTAL: \$16,351
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bottino, M. L.	GSFC/Schnetzler, C. C.	75-Political Sci
(51-680 176-52-41)	(51-680 177-53-41)	

NAS 8-29578 New York University 2836
Study of Eastern Test Range ocean wave statistics for space shuttle booster design & recovery operations

<i>Period</i>	<i>Obligations</i>	
02/05/73-06/05/73	FY75:	TOTAL: \$9,994
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Pierson, W. J.	MSFC/Brown, S. C.	33-Oceanography
	MSFC/Fichil, G. H.	
(62-920 976-30-00)	(62-920 976-00-00)	

NGL 33-016-013 New York University 2837
Theoretical research on the properties of the atmosphere of the earth and other planets and on the atmospheric effects of solar activity

<i>Period</i>	<i>Obligations</i>	
06/01/73-06/30/76	FY75:	TOTAL: \$591,181
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Isaacson, E.	GSFC/Halem, M.	31-Atmos Sci
Stoker, J. J., Jr.		
(51-680 408-02-02)	(51-680 160-00-00)	

NGL 33-016-119 New York University 2838
Engine effect on sonic boom; unsteady engine inlet interaction

<i>Period</i>	<i>Obligations</i>	
06/05/67-07/31/76	FY75: \$65,000	TOTAL: \$519,629
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ferri, A.	LARC/Fetterman, D. E.	41-Aero Engr
Ting, L.		
(23-702 743-04-31)	(23-704 501-06-11)	

NGR 33-016-131 New York University 2839
Hypersonic engine airplane integration

<i>Period</i>	<i>Obligations</i>	
02/27/68-07/31/76	FY75: \$110,385	TOTAL: \$964,571
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ferri, A.	LARC/Huber, P. W.	41-Aero Engr
	LARC/Anderson, G. Y.	
(23-702 505-05-41)	(23-760 126-00-00)	

NGR 33-016-167 New York University 2840
Numerical design of transonic shockless airfoils

<i>Period</i>	<i>Obligations</i>	
10/01/70-08/31/75	FY75: \$80,000	TOTAL: \$435,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Garabedian, P. R.	LARC/South, J. C., Jr.	21-Mathematics
(23-702 505-06-31)	(23-702 505-06-11)	

NGR 33-016-177 New York University 2841
Fluid dynamic aspects of jet noise generation

<i>Period</i>	<i>Obligations</i>	
08/29/72-09/30/75	FY75: \$50,000	TOTAL: \$156,378
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ferri, A.	LARC/Norum, T. D.	41-Aero Engr
	LARC/Padula, S. L.	
(23-702 505-03-12)		

NGR 33-016-179 New York University 2842
Study of Reynolds number and Mach number effect on space shuttle configuration

<i>Period</i>	<i>Obligations</i>	
09/01/71-03/01/74	FY75: \$10,251	TOTAL: \$99,995
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Zakkay, V.	LARC/Dunavant, J. C.	41-Aero Engr
	LARC/Whitehead, A. H., Jr.	
(23-704 502-37-01)		

NGR 33-016-196 New York University 2843
Physical properties of molecular clouds

<i>Period</i>	<i>Obligations</i>	
09/01/73-10/31/75	FY75: \$20,000	TOTAL: \$40,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Glassgold, A. E.	HQ-SG/Rosendahl, J. D.	13-Physics
	HQ-SG/Roman, N. G.	
(10-850 188-41-51)		

NGR 33-016-197 New York University 2844
Scale model wind tunnel study of dispersion of pollutants in the Cleveland area

<i>Period</i>	<i>Obligations</i>	
03/15/73-08/31/75	FY75:	TOTAL: \$90,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hoydysh, W. G.	LERC/Neustadter, H. E.	39-Env Sci, NEC
(22-702 770-18-01)		

NGR 33-016-201 New York University 2845
Study of transonic flow over yawed wings

<i>Period</i>	<i>Obligations</i>	
05/29/73-08/31/76	FY75: \$50,000	TOTAL: \$100,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Garabedian, P. R.	ARC/Hicks, R. M.	41-Aero Engr
Jameson, A.	ARC/Pfyl, F. A.	
Bauer, F.		
(21-702 505-11-12)		

NSG 1049 New York University 2846
Skin friction drag reduction

<i>Period</i>	<i>Obligations</i>	
04/01/74-07/31/75	FY75:	TOTAL: \$79,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ferri, A.	LARC/Hefner, J. N.	41-Aero Engr
Zakkay, V.		
(23-702 760-64-60)		

**NASA'S UNIVERSITY PROGRAM
NEW YORK (Continued)**

NSG 3059 New York University **2847**
Analysis of experiments on hydrodynamics instability in the
absence of gravity
Period *Obligations*
06/01/75-05/31/76 FY75: \$20,000 TOTAL: \$20,000
Prin. Invest. NASA Tech. Officer CASE Category
Keller, J. B. LERC/Labus, T. L. 49-Engr, NEC
(22-704 750-01-51)

NSG 5032 New York University **2848**
Optimization and machine independence of programming
languages
Period *Obligations*
12/01/74-11/30/75 FY75: \$35,808 TOTAL: \$35,808
Prin. Invest. NASA Tech. Officer CASE Category
Schwartz, J. T. GSFC/Schneck, P. B. 13-Physics
GSFC/Halem, M.
(51-500 310-40-41)

NSG 5033 New York University **2849**
Atmospheric chemistry and transport models of the natural and
perturbed stratosphere
Period *Obligations*
12/01/74-11/30/75 FY75: \$25,249 TOTAL: \$25,249
Prin. Invest. NASA Tech. Officer CASE Category
Hoffert, M. I. GSFC/Stewart, R. W. 31-Atmos Sci
(51-680 176-10-42)

NSG 5034 New York University **2850**
Research program in climatology and meteorology
Period *Obligations*
01/01/75-12/31/75 FY75: \$52,500 TOTAL: \$52,500
Prin. Invest. NASA Tech. Officer CASE Category
Isaacson, E. GSFC/Halem, M. 31-Atmos Sci
Stoker, J. J., Jr. GSFC/Hansen, J. E.
(51-680 175-11-44) (51-680 611-13-00)

NSG 5045 New York University **2851**
Investigation of the planetary boundary layer in relation to large
scale atmospheric dynamics
Period *Obligations*
01/01/75-12/31/75 FY75: \$25,000 TOTAL: \$25,000
Prin. Invest. NASA Tech. Officer CASE Category
Hoffert, M. I. GSFC/Halem, M. 31-Atmos Sci
GSFC/Schneck, P. B.
(51-680 611-13-00)

NSG 7116 New York University **2852**
A study of solar-inplanetary relationship using galactic cosmic
ray decreases
Period *Obligations*
03/01/75-02/29/76 FY75: \$15,000 TOTAL: \$15,000
Prin. Invest. NASA Tech. Officer CASE Category
Korff, S. A. HQ-SG/Lazarus, A. J. 11-Astronomy
HQ-SG/Opp, A. G.
(10-850 385-46-00)

NAS 2-8399 Polytechnic Institute of New York **2853**
Radiation integrals in helicopter rotor research
Period *Obligations*
06/03/74-09/15/75 FY75: \$12,314 TOTAL: \$23,458
Prin. Invest. NASA Tech. Officer CASE Category
Isom, M. P. ARC/Schmitz, F. H. 41-Aero Engr
(21-702 505-17-00)

NCA 2-95501 Polytechnic Institute of New York **2854**
Stability of new transparent polymeric materials
Period *Obligations*
01/20/75-01/19/76 FY75: \$9,994 TOTAL: \$9,994
Prin. Invest. NASA Tech. Officer CASE Category
Pearce, E. M. ARC/Zill, L. P. 12-Chemistry
(21-704 501-21-22)

NGR 33-006-047 Polytechnic Institute of New York **2855**
Investigation of diffraction by planetary atmospheres
Period *Obligations*
03/25/68-03/31/76 FY75: \$10,000 TOTAL: \$174,509
Prin. Invest. NASA Tech. Officer CASE Category
Gross, S. H. HQ-SG/Cauffman, D. P. 13-Physics
HQ-SG/Schmerling, E. R.
(10-850 188-36-56) (10-850 188-36-55)

NGR 33-006-068 Polytechnic Institute of New York **2856**
Study of escape of gases from comets, planets, and satellites
Period *Obligations*
12/26/72-12/31/76 FY75: \$31,006 TOTAL: \$86,457
Prin. Invest. NASA Tech. Officer CASE Category
Gross, S. H. HQ-SL/Fellows, R. F. 31-Atmos Sci
HQ-SL/Brunk, W. E.
(10-840 185-47-81)

NGR 33-006-070 Polytechnic Institute of New York **2857**
Synthesis of polypeptides, sugar phosphates and polynucleotides
from intermediates under simulated conditions
Period *Obligations*
04/26/73-06/14/76 FY75: \$45,500 TOTAL: \$129,448
Prin. Invest. NASA Tech. Officer CASE Category
Eirich, F. R. HQ-SL/Young, R. S. 12-Chemistry
(10-840 192-55-61)

NSG 1091 Polytechnic Institute of New York **2858**
Viscous flow solutions by a cubic spline procedure
Period *Obligations*
09/01/74-08/31/75 FY75: \$24,000 TOTAL: \$24,000
Prin. Invest. NASA Tech. Officer CASE Category
Rubin, S. G. LARC/Graves, R. A., Jr. 21-Mathematics
LARC/Rudy, D. H.
(23-702 505-06-11) (23-704 506-26-20)

NSG 1105 Polytechnic Institute of New York **2859**
Dynamic instability of ducts conveying fluid
Period *Obligations*
09/16/74-08/15/75 FY75: \$38,400 TOTAL: \$38,400
Prin. Invest. NASA Tech. Officer CASE Category
Yu, Y. Y. LARC/Pinson, L. D. 41-Aero Engr
(23-704 502-32-02) (23-704 502-22-01)

NSG 1107 Polytechnic Institute of New York **2860**
Wing-body aerodynamic interference investigation: Fuselages of
general cross-sections
Period *Obligations*
10/01/74-09/30/75 FY75: \$29,994 TOTAL: \$29,994
Prin. Invest. NASA Tech. Officer CASE Category
Krenkel, A. R. LARC/Morgan, H. L., Jr. 41-Aero Engr
LARC/Paulson, J. W., Jr.
(23-702 505-10-41)

**NASA'S UNIVERSITY PROGRAM
NEW YORK (Continued)**

NSG 1198 Polytechnic Institute of New York **2861**
 Applicability of Brillouin scattering to flow field diagnostics
Period *Obligations*
 07/01/75-06/30/76 FY75: \$20,776 TOTAL: \$20,776
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Lederman, S. LARC/Hoppe, J. C. 42-Astro Engr
 LARC/Hunter, W. W.
 (23-702 505-06-43)

NSG 2060 Polytechnic Institute of New York **2862**
 International Symposium on Macromolecules
Period *Obligations*
 05/01/75-06/01/75 FY75: \$4,000 TOTAL: \$4,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Morawetz, H. E. ARC/Fohlen, G. M. 12-Chemistry
 Giordano, A. B. ARC/Parker, J. A.
 Banks, E.
 (21-704 501-21-22)

NSG 5041 Polytechnic Institute of New York **2863**
 Meteorology and atmospheric physics research
Period *Obligations*
 01/01/75-06/30/75 FY75: \$12,500 TOTAL: \$12,500
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Miller, J. E. GSFC/Halem, M. 31-Atmos Sci
 GSFC/Hansen, J. E.
 (51-680 611-13-00)

NSG 9022 Queens College **2864**
 Sedimentological studies of lunar cores utilizing X-ray enhance-
 ment techniques
Period *Obligations*
 02/01/75-01/31/76 FY75: \$14,000 TOTAL: \$14,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Coch, N. K. JSC/Harris, J. W. 32-Geological Sci
 (72-810 388-10-03)

NAS 8-26146 Rensselaer Polytechnic Institute **2865**
 Growth of single crystals by vapor transport in zero gravity
 environment
Period *Obligations*
 06/04/70-09/06/75 FY75: \$20,000 TOTAL: \$168,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Petersen, G. W. MSFC/Davidson, M. C. 47-Materials Engr
 MSFC/Arnett, G. M.
 (62-630 179-12-13) (62-980 975-00-00)

NAS 8-28307 Rensselaer Polytechnic Institute **2866**
 Vapor growth of II-VI compounds
Period *Obligations*
 10/11/72-10/15/75 FY75: \$20,000 TOTAL: \$50,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Wiedemeier, H. MSFC/Adams, W. R. 19-Phys Sci, NEC
 MSFC/Davidson, M. C.
 (62-960 948-90-95)

NAS 8-30578 Rensselaer Polytechnic Institute **2867**
 Crystal growth from vapor phase in zero environment
Period *Obligations*
 01/11/74-03/31/76 FY75: TOTAL: \$72,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Wiedemeier, H. MSFC/Adams, W. R. 19-Phys Sci, NEC
 MSFC/Boese, A.
 (62-930 966-30-00)

NGL 33-018-003 Rensselaer Polytechnic Institute **2868**
 Interdisciplinary materials research including fundamental physics
 & chemistry of materials, environmental effects, and related
 problems
Period *Obligations*
 09/01/70-04/30/78 FY75: \$200,000 TOTAL: \$4,209,400
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Wiberly, S. E. LERC/Lad, R. A. 47-Materials Engr
 (22-704 506-16-14) (22-704 503-10-03)

NGL 33-018-007 Rensselaer Polytechnic Institute **2869**
 Investigation of composition & chemical behavior of atmosphere
 of Venus
Period *Obligations*
 06/19/62-08/31/77 FY75: \$100,000 TOTAL: \$1,287,400
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Harteck, P. HQ-SL/Fellows, R. F. 31-Atmos Sci
 HQ-SL/Hipsher, H. F.
 (10-840 185-47-85) (10-840 185-47-82)

NGL 33-018-091 Rensselaer Polytechnic Institute **2870**
 Analysis and design of a capsule landing system and surface
 vehicle control system for Mars exploration
Period *Obligations*
 06/14/67-05/31/77 FY75: \$125,000 TOTAL: \$815,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Yerazunis, S. W. HQ-SL/Tarver, P. 49-Engr, NEC
 HQ-SL/Herman, D. H.
 (10-840 186-68-55)

NGR 33-018-148 Rensselaer Polytechnic Institute **2871**
 Photochemical investigations of the atmosphere of other planets
Period *Obligations*
 08/27/70-08/31/76 FY75: \$40,000 TOTAL: \$154,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Ferris, J. P. HQ-SL/Young, R. S. 12-Chemistry
 (10-840 192-55-61)

NGR 33-018-152 Rensselaer Polytechnic Institute **2872**
 Mechanics of high energy brakes
Period *Obligations*
 06/29/70-06/30/76 FY75: \$80,000 TOTAL: \$287,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Ling, F. F. LERC/Bill, R. C. 41-Aero Engr
 Peterson, M. B. LERC/Johnson, R. L.
 Ho, T. L.
 (22-702 505-08-22) (22-760 126-00-00)

NGR 33-018-188 Rensselaer Polytechnic Institute **2873**
 Design & analysis of communication subsystem for planetary
 entry missions
Period *Obligations*
 04/26/73-08/31/75 FY75: TOTAL: \$42,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Modestino, J. W. ARC/Grant, T. L. 45-Elec Engr
 (21-840 186-68-65) (21-840 186-68-60)

NSG 1052 Rensselaer Polytechnic Institute **2874**
 Utilization of ion implanted filaments as ion sources for in-situ
 calibration of unmanned space vehicles and other applications
Period *Obligations*
 05/01/74-10/31/75 FY75: \$26,200 TOTAL: \$36,200
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 White, F. A. LARC/Wood, G. M. 19-Phys Sci, NEC
 (23-704 506-18-21) (23-704 502-03-53)

**NASA'S UNIVERSITY PROGRAM
NEW YORK (Continued)**

NSG 1188	Rensselaer Polytechnic Institute	2875	NAS 8-30251	State Univ of New York - Albany	2882
Reduced state feedback gain computation			Data analysis of SO73 gegenschein/Zodiacal light experiment		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$47,500	TOTAL: \$47,500	10/01/73-06/30/75	FY75: \$220,149	TOTAL: \$377,443
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kaufman, H.	NASA Tech. Officer	41-Aero Engr	Weinberg, J. L.	MSFC/Gary, G. A.	13-Physics
(23-702 512-53-01)	LARC/Hood, R. V.		(62-850 357-48-05)	MSFC/Miller, E. R.	
				(62-960 948-70-70)	
NSG 3007	Rensselaer Polytechnic Institute	2876	NGR 33-182-018	State Univ of New York - Albany	2883
Relationship between boron fiber properties and its use in composites			Polarimetric observations of comet Kohoutek from the ground		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/01/74-05/31/76	FY75: \$35,000	TOTAL: \$70,000	12/03/73-09/02/74	FY75:	TOTAL: \$15,746
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Diefendorf, R. J.	NASA Tech. Officer	47-Materials Engr	Weinberg, J. L.	GSFC/Hobbs, R. W.	11-Astronomy
(22-704 506-16-12)	LERC/Grimes, H. H.		(51-850 188-45-51)	LERC/Lad, R. A.	
	(22-704 502-01-02)				
NSG 3057	Rensselaer Polytechnic Institute	2877	NSG 2080	State Univ of New York - Albany	2884
Advanced beam probe diagnostic system			Stratospheric aerosol as possible sources and sinks of trace gases		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
03/01/75-09/01/76	FY75: \$29,550	TOTAL: \$29,550	05/01/75-04/30/76	FY75: \$25,672	TOTAL: \$25,672
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hickok, R. L.	NASA Tech. Officer	13-Physics	Kiang, C. S.	ARC/Reynolds, R. T.	31-Atmos Sci
(22-704 506-25-11)	LERC/Reinmann, J. J.		Mohnen, V. A.	ARC/Pollack, J. B.	
	LERC/Seikel, G. R.		(21-920 989-15-00)		
NSG 7065	Rensselaer Polytechnic Institute	2878	NSG 7093	State Univ of New York - Albany	2885
Structure-function studies on bacillus stearothermophilus			Photoelectric studies of the night glow		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/01/74-09/30/76	FY75: \$25,712	TOTAL: \$46,512	12/23/74-07/31/75	FY75: \$40,000	TOTAL: \$40,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wedler, F. C.	NASA Tech. Officer	51-Biology	Weinberg, J. L.	HQ-SG/Dubin, M.	31-Atmos Sci
Boylen, C. W.	HQ-SL/Geib, D. S.		(10-850 188-45-51)		
(10-840 192-55-64)					
NSG 3072	Rochester Institute of Technology	2879	NSG 9028	State Univ of New York - Albany	2886
Development of flexible rotor balancing criteria			Non-invasive technique for measurement of cardiac output for space shuttle use		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
07/01/75-06/30/76	FY75: \$31,783	TOTAL: \$31,783	05/30/75-11/09/75	FY75: \$42,855	TOTAL: \$42,855
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rieger, N. F.	NASA Tech. Officer	46-Mech Engr	Farhi, L. E.	JSC/Rummel, J. A.	51-Biology
Walter, W. W.	LERC/Anderson, W. J.		(72-970 970-51-14)		
	LERC/Fleming, D. P.				
NSG 5018	St. Lawrence University	2880	NAS 8-29745	State Univ of New York - Buffalo	2887
Investigation of relationship between linears and petroleum production in the Williston Basin			Electrophoretic separation of cells in space		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
08/15/74-08/15/75	FY75: \$10,000	TOTAL: \$10,000	05/15/73-09/16/74	FY75:	TOTAL: \$79,995
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Erickson, J. M.	NASA Tech. Officer	32-Geological Sci	Bigazzi, P. E.	MSFC/Allen, R. E.	13-Physics
Street, J. S.	GSFC/Short, N. M.		(62-630 162-01-03)	MSFC/Krupnick, A. C.	
(51-680 641-14-20)					
NAS 5-20683	State Univ of New York - Albany	2881	NAS 8-31292	State Univ of New York - Buffalo	2888
Image processing and data reduction of Apollo low light level photographs			Electrophoresis technical experiment		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
07/27/74-12/31/74	FY75: \$5,441	TOTAL: \$5,441	11/15/74-12/31/75	FY75: \$57,000	TOTAL: \$57,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Alvord, G. C.	NASA Tech. Officer	11-Astronomy	Bigazzi, P. E.	MSFC/Allen, R. E.	51-Biology
(51-910 914-49-00)	GSFC/Klinglesmith, D.A.		(62-930 966-30-00)	MSFC/Rhodes, P. H.	

**NASA'S UNIVERSITY PROGRAM
NEW YORK (Continued)**

NAS 8-31434 State Univ of New York - Buffalo 2889
Computer program for fast Karnunen-Loeve transform algorithm
Period *Obligations*
05/02/75-11/02/75 FY75: \$27,498 TOTAL: \$27,498
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jain, A. K. MSFC/Van Vleck, E. 21-Mathematics
MSFC/Jayroe, R.
(62-620 656-42-01)

NGL 33-183-012 State Univ of New York - Buffalo 2890
Radar studies of bird migration
Period *Obligations*
08/01/70-08/31/74 FY75: TOTAL: \$13,026
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Williams, T. C. WFC/Vaughn, C. R. 51-Biology
(53-680 160-00-00)

NGL 33-183-013 State Univ of New York - Buffalo 2891
Lunar sample analysis
Period *Obligations*
02/01/73-01/31/77 FY75: \$12,237 TOTAL: \$71,520
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cadenhead, D. A. JSC/Harris, J. W. 12-Chemistry
(72-810 388-10-03)

NGR 33-015-002 State Univ of New York - Buffalo 2892
Studies in cellular theory and molecular mechanisms
Period *Obligations*
07/30/63-09/30/75 FY75: \$120,000 TOTAL: \$862,237
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Danielli, J. F. HQ-SL/Young, R. S. 12-Chemistry
(10-840 192-55-61)

NGR 33-015-108 State Univ of New York - Buffalo 2893
Planetary curriculum and related geologic research
Period *Obligations*
06/02/70-05/14/75 FY75: TOTAL: \$131,223
Prin. Invest. *NASA Tech. Officer* *CASE Category*
King, J. S. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Holt, H. E.
(10-840 185-50-81) (10-840 384-50-80)

NSG 7071 State Univ of New York - Buffalo 2894
Experimental and theoretical investigation for the suppression of plasma arc drops in thermionic converters
Period *Obligations*
07/01/74-06/30/76 FY75: \$106,878 TOTAL: \$106,878
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Shaw, D. T. HQ-RR/Lundholm, J. G. 13-Physics
HQ-RR/Schwenk, F. C.
(10-704 502-12-11)

NAS 1-10493 State Univ of New York - Stony Brook 2895
Participation in the science planning for the Viking 1975 missions in the area of molecular analysis
Period *Obligations*
01/18/71-03/31/77 FY75: \$9,700 TOTAL: \$94,444
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Owen, T. LARC/Williams, T. S., Jr. 39-Env Sci, NEC
LARC/Glenny, W. R.
(23-840 815-20-00)

NGL 33-015-082 State Univ of New York - Stony Brook 2896
Study of high energy and relativistic astrophysics
Period *Obligations*
10/16/69-09/30/74 FY75: TOTAL: \$189,940
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Owen, T. GSFC/Chiu, H. Y. 11-Astronomy
(51-850 405-02-02)

NGL 33-015-130 State Univ of New York - Stony Brook 2897
Lunar sample analysis
Period *Obligations*
02/11/71-01/31/78 FY75: \$135,875 TOTAL: \$644,685
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Papike, J. J. JSC/Harris, J. W. 13-Physics
(72-810 388-10-01)

NGL 33-015-174 State Univ of New York - Stony Brook 2898
Lunar sample analysis
Period *Obligations*
02/01/73-01/31/76 FY75: \$37,156 TOTAL: \$237,156
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schaeffer, O. A. JSC/Harris, J. W. 12-Chemistry
(72-810 388-10-02)

NGR 33-015-068 State Univ of New York - Stony Brook 2899
Techniques for interferometrically controlled ruling of improved large diffraction gratings
Period *Obligations*
12/07/67-06/30/73 FY75: \$2,257 TOTAL: \$509,227
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Stroke, G. W. HQ-SG/Weldon, J. M. 13-Physics
GSFC/Mangus, J. D.
(10-850 188-00-00)

NGR 33-015-139 State Univ of New York - Stony Brook 2900
Quantitative spectroscopic measurements on the principal constituents in planetary atmospheres
Period *Obligations*
04/12/71-05/31/78 FY75: \$70,052 TOTAL: \$215,090
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Varanasi, P. HQ-SL/Fellows, R. F. 31-Atmos Sci
HQ-SL/Brunk, W. E.
(10-840 185-47-83)

NGR 33-015-141 State Univ of New York - Stony Brook 2901
Spectroscopic observations of the planets
Period *Obligations*
01/26/71-04/30/76 FY75: \$29,748 TOTAL: \$144,173
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Owen, T. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SL/Fellows, R. F.
(10-840 196-41-80)

NGR 33-015-160 State Univ of New York - Stony Brook 2902
Thermodynamics and kinetics of reactions in protective coating systems
Period *Obligations*
04/12/72-10/01/76 FY75: \$18,809 TOTAL: \$128,482
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Seigle, L. L. LERC/Levine, S. R. 47-Materials Engr
(22-702 505-01-11) (22-704 501-01-06)

**NASA'S UNIVERSITY PROGRAM
NEW YORK (Continued)**

NGR 33-015-163 State Univ of New York - Stony Brook 2903
Research on atmospheric pollution effects of turbine engine products over range of operating altitudes

<i>Period</i>	<i>Obligations</i>	
05/22/72-12/31/75	FY75: \$5,000	TOTAL: \$53,544
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Berlad, A. L. (22-702 505-03-33)	LERC/Gordon, S. (22-762 132-00-00)	39-Env Sci, NEC

NGR 33-015-165 State Univ of New York - Stony Brook 2904
Planetary atmospheres research

<i>Period</i>	<i>Obligations</i>	
11/01/72-10/31/75	FY75: \$42,908	TOTAL: \$88,819
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Owen, T. (51-840 404-02-02)	GSFC/Hansen, J. E. GSFC/Thaddeus, P. (51-840 404-00-00)	31-Atmos Sci

NGR 33-015-166 State Univ of New York - Stony Brook 2905
Infrared interferometry of astronomical objects using an airborne 91.5 cm telescope

<i>Period</i>	<i>Obligations</i>	
03/01/73-06/30/75	FY75:	TOTAL: \$9,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Knacke, R. F. (21-850 352-02-03)	ARC/Cameron, R. M.	11-Astronomy

NGR 33-015-169 State Univ of New York - Stony Brook 2906
Organic molecules in the atmosphere of Jupiter; investigation of colors in Jovian cloud deck

<i>Period</i>	<i>Obligations</i>	
10/16/72-11/31/75	FY75: \$17,092	TOTAL: \$54,670
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Owen, T. (10-840 192-55-61)	HQ-SL/Young, R. S.	12-Chemistry

NGR 33-015-180 State Univ of New York - Stony Brook 2907
Cosmic rays in interplanetary space

<i>Period</i>	<i>Obligations</i>	
01/07/74-06/30/75	FY75: \$16,500	TOTAL: \$41,300
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Forman, M. A. (10-850 385-46-00)	HQ-SG/Lazarus, A. J. HQ-SG/Opp, A. G.	11-Astronomy

NGR 33-015-195 State Univ of New York - Stony Brook 2908
Observations of comet Kohoutek at far infrared and submillimeter wavelengths

<i>Period</i>	<i>Obligations</i>	
12/10/73-09/09/74	FY75:	TOTAL: \$3,470
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Simon, M. (51-840 196-41-53)	GSFC/Hobbs, R. W. GSFC/Maran, S. P.	11-Astronomy

NGR 33-015-196 State Univ of New York - Stony Brook 2909
Study of novel techniques for interferometrical controlled ruling of improved large diffraction gratings

<i>Period</i>	<i>Obligations</i>	
01/01/74-06/30/75	FY75: \$9,000	TOTAL: \$45,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stroke, G. W. (51-850 188-38-51)	GSFC/Mangus, J. D. (51-910 914-40-00)	13-Physics

NSG 3051 State Univ of New York - Stony Brook 2910
Combustion of porous solids at reduced gravitational conditions

<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$19,846	TOTAL: \$19,846
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Berlad, A. L. (22-704 750-01-51)	LERC/Cochran, T. H.	43-Chem Engr

NSG 5015 State Univ of New York - Stony Brook 2911
Theoretical studies of the atmospheres of the giant planets

<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/76	FY75: \$24,000	TOTAL: \$57,026
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hogan, J. S. (51-840 404-02-02)	GSFC/Hansen, J. E. GSFC/Stone, P.	31-Atmos Sci

NSG 7003 State Univ of New York - Stony Brook 2912
Research in grating technology and related areas

<i>Period</i>	<i>Obligations</i>	
11/01/73-06/30/75	FY75: \$54,000	TOTAL: \$78,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stroke, G. W. (10-850 188-38-01)	HQ-SG/Weldon, J. M. HQ-SG/Jordan, S. D. (10-850 188-38-53)	11-Astronomy

NSG 7036 State Univ of New York - Stony Brook 2913
Lunar rock surface phenomena

<i>Period</i>	<i>Obligations</i>	
02/01/74-06/30/75	FY75:	TOTAL: \$18,640
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hartung, J. B. (10-810 383-20-04)	HQ-SM/Kosofsky, L. J.	32-Geological Sci

NSG 9013 State Univ of New York - Stony Brook 2914
Dating of lunar cratering events and rates of lunar surface processes

<i>Period</i>	<i>Obligations</i>	
07/15/74-01/31/76	FY75: \$59,049	TOTAL: \$59,049
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hartwig, J. B. (72-810 388-10-03)	JSC/Harris, J. W.	32-Geological Sci

NAS 5-22277 State Univ of New York - Downstate Med Ctr 2915
Redox determination of bacteriological presence in urine

<i>Period</i>	<i>Obligations</i>	
11/13/73-11/12/74	FY75:	TOTAL: \$4,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fealey, R. D. Damadian, R. (51-250 141-95-02)	GSFC/Chen, W. T. GSFC/Friedman, D. S. (51-250 141-00-00)	52-Clinical Med

NAS 9-11846 State Univ of New York - Upstate Med Ctr 2916
Analyses of urine samples for antidiuretic hormone

<i>Period</i>	<i>Obligations</i>	
06/10/71-08/31/75	FY75:	TOTAL: \$69,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Miller, M. (72-970 970-51-16)	JSC/Leach, C. S.	59-Life Sci, NEC

**NASA'S UNIVERSITY PROGRAM
NEW YORK (Continued)**

NAS 9-12770 State Univ of New York Col - Geneseo **2917**
Lunar geology eastern maria data analysis experiment
Period Obligations
06/20/72-12/31/75 FY75: \$22,075 TOTAL: \$68,721
Prin. Invest. NASA Tech. Officer CASE Category
Young, R. S. JSC/Hardee, S. N. 32-Geological Sci
(72-810 383-30-02) (72-910 914-00-00)

NGR 33-219-002 State Univ of New York Col - Geneseo **2918**
Comparison of Lyman 2 and HE 1 & 10830 line structures and variations in early type star atmosphere
Period Obligations
05/14/73-10/31/75 FY75: \$5,100 TOTAL: \$6,800
Prin. Invest. NASA Tech. Officer CASE Category
Meisel, D. D. HQ-SG/Rosendhal, J. D. 11-Astronomy
HQ-SG/Roman, N. G.
(10-850 385-41-00) (10-850 188-41-55)

NGR 33-022-157 Syracuse University **2919**
Application of strain range partitioning to crack propagation
Period Obligations
09/01/73-11/30/76 FY75: \$27,277 TOTAL: \$44,227
Prin. Invest. NASA Tech. Officer CASE Category
Liu, H. W. LERC/Hirschberg, M. H.
(22-702 505-01-21) 47-Materials Engr

NSG 1194 Syracuse University **2920**
Study of the stress sensitivity of the coercive force of micron sized barium ferrite and bismuth manganese particles
Period Obligations
07/01/75-06/30/76 FY75: \$24,930 TOTAL: \$24,930
Prin. Invest. NASA Tech. Officer CASE Category
Schroder, K. LARC/Stermer, R. L. 45-Elec Engr
(23-704 506-90-21)

NGR 33-032-004 Union College **2921**
Optically pumped submillimeter waveguide maser amplifiers and oscillators
Period Obligations
04/15/74-04/14/76 FY75: \$30,987 TOTAL: \$50,987
Prin. Invest. NASA Tech. Officer CASE Category
Galantowicz, A. GSFC/McAvoy, N. 13-Physics
(51-620 650-60-12) (51-620 643-60-12)

NAS 5-20028 University of Rochester **2922**
Optical components associated with investigation of solar phenomena in ultraviolet region
Period Obligations
01/15/74-10/30/75 FY75: TOTAL: \$13,200
Prin. Invest. NASA Tech. Officer CASE Category
Baumeister, P. W. GSFC/Osantowski, J. F. 13-Physics
(51-850 188-00-00)

NGR 33-019-002 University of Rochester **2923**
Research on automatic remote direction bacteria including modification of detection device for chemical analysis of lunar & planetary surface materials
Period Obligations
12/19/61-04/30/76 FY75: \$36,647 TOTAL: \$1,084,675
Prin. Invest. NASA Tech. Officer CASE Category
Hempfling, W. P. HQ-SL/Young, R. S. 51-Biology
(10-840 192-55-63)

NGR 33-019-127 University of Rochester **2924**
50 microns 100 microns observations of strong sources with a lamellar grating interferometer on the C-141 infrared telescope
Period Obligations
03/06/73-09/01/75 FY75: \$40,000 TOTAL: \$80,000
Prin. Invest. NASA Tech. Officer CASE Category
Pipher, J. L. ARC/Cameron, R. M. 11-Astronomy
Duthie, G. J. ARC/Gillespie, C. M., Jr.
Savedoff, M.
(21-850 352-02-03)

NSG 1211 University of Rochester **2925**
Time course of visual information transfer during aircraft control problems
Period Obligations
06/16/75-09/01/76 FY75: \$36,632 TOTAL: \$36,632
Prin. Invest. NASA Tech. Officer CASE Category
Brown, J. L. LARC/Gainer, P. A. 69-Psych, NEC
Dick, A. O. LARC/Spady, A. A., Jr.
(23-702 723-01-01) (23-704 504-09-31)

NSG 5054 University of Rochester **2926**
Investigation of the radius and composition of Sirius B from far UV observations
Period Obligations
01/01/75-12/31/75 FY75: \$2,124 TOTAL: \$2,124
Prin. Invest. NASA Tech. Officer CASE Category
Savedoff, M. P. GSFC/Kupperian, J. E. 11-Astronomy
Van Horn, H. M.
(51-850 831-42-00)

NCA 2-23501 Vassar College **2927**
Visual stimulation studies
Period Obligations
05/01/75-04/30/76 FY75: \$5,588 TOTAL: \$5,588
Prin. Invest. NASA Tech. Officer CASE Category
Christensen, C. ARC/Zill, L. P. 51-Biology
(21-970 970-21-11)

NGL 33-023-018 Yeshiva University **2928**
Research in space physics
Period Obligations
06/29/66-08/31/76 FY75: \$11,000 TOTAL: \$652,800
Prin. Invest. NASA Tech. Officer CASE Category
Cameron, A. G. GSFC/Hansen, J. E. 11-Astronomy
GSFC/Thaddeus, P.
(51-840 404-02-02) (51-850 405-02-02)

NORTH CAROLINA

NGT 34-017-001 Bennett College **2929**
Training of two undergraduate students in the space-related sciences and engineering
Period Obligations
06/01/74-05/31/76 FY75: \$7,000 TOTAL: \$14,000
Prin. Invest. NASA Tech. Officer CASE Category
Sayles, J. H. HQ-P/Pohly, J. G. 99-Multi-Discip
HQ-U/Jenkins, H. G.
(10-030 010-00-00)

NASA'S UNIVERSITY PROGRAM
NORTH CAROLINA (Continued)

NSG 1032 **Bennett College** **2930**
 Development of a laboratory transportable absorption column applicable to air sampling industrial launch sites for GLC analysis

<i>Period</i>	<i>Obligations</i>	
04/15/74-05/14/76	FY75: \$31,254	TOTAL: \$66,785
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Greaux, A. E.	LARC/Cofer, W. R., III	12-Chemistry
Duhart, B. T.		
(23-371 340-00-00)		

NAS 2-7655 **Duke University** **2931**
 Brain and scalp sections of mice

<i>Period</i>	<i>Obligations</i>	
06/20/73-06/19/74	FY75:	TOTAL: \$21,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Vogel, F. S.	ARC/Harmaker, W. E.	53-Other Medical
(21-970 970-00-00)		

NAS 5-22475 **Duke University** **2932**
 Direct energy transfer power subsystem modeling and analysis

<i>Period</i>	<i>Obligations</i>	
06/20/75-06/20/77	FY75: \$20,000	TOTAL: \$20,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wilson, T. G.	GSFC/Rodriguez, G. E.	45-Elec Engr
Owen, H. A., Jr.		
(51-680 608-21-00)	(51-840 823-11-00)	(51-850 862-11-00)

NGL 34-001-001 **Duke University** **2933**
 Research in satellite electrical power conversion systems and circuit protection

<i>Period</i>	<i>Obligations</i>	
02/19/65-02/29/78	FY75: \$80,000	TOTAL: \$886,031
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wilson, T. J.	GSFC/Rodriguez, G. E.	45-Elec Engr
Owen, H. A., Jr.	GSFC/Pasciutti, E. R.	
(51-704 506-23-15)	(51-704 506-23-22)	(51-704 506-23-32)

NGR 34-001-041 **Duke University** **2934**
 Research in satellite power conversion system

<i>Period</i>	<i>Obligations</i>	
02/01/72-11/30/75	FY75:	TOTAL: \$17,226
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
O'Foghluudha, F. R.	GSFC/Trombka, J. I.	11-Astronomy
(51-810 383-09-61)	(51-810 383-20-01)	

NGR 34-001-054 **Duke University** **2935**
 Cosmic ray track interactions in lunar pyroxenes

<i>Period</i>	<i>Obligations</i>	
02/01/74-01/31/76	FY75: \$975	TOTAL: \$1,675
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cocks, F. H.	JSC/Harris, J. W.	13-Physics
(72-810 388-10-03)	(72-810 388-00-00)	

NSG 1121 **Duke University** **2936**
 Potential role of the helicopter in urban transportation

<i>Period</i>	<i>Obligations</i>	
11/08/74-12/31/75	FY75: \$24,595	TOTAL: \$24,595
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dajani, J. S.	LARC/Snyder, W. J.	44-Civil Engr
	LARC/Conner, D. W.	
(23-702 505-10-24)		

NSG 5020 **Duke University** **2937**
 Recognition of electromagnetic signatures for tornado detection

<i>Period</i>	<i>Obligations</i>	
08/12/74-08/11/75	FY75: \$7,000	TOTAL: \$7,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wang, P. P.	GSFC/Cote, C. E.	45-Elec Engr
(51-630 161-05-07)		

NSG 1179 **Elizabeth City State University** **2938**
 Research program on the charge transfer excited states of transition metal complexes

<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$24,993	TOTAL: \$24,993
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chatterjee, K. K.	LARC/Conway, E. J.	12-Chemistry
	LARC/Phillips, D. H.	
(23-371 340-00-00)		

NGR 34-012-003 **North Carolina A&T State University** **2939**
 Applications of scattering theory to spectral line satellites

<i>Period</i>	<i>Obligations</i>	
08/14/70-02/28/75	FY75:	TOTAL: \$56,130
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Madan, R. N.	HQ-P/Pohly, J. G.	45-Elec Engr
(10-371 340-00-00)	(10-370 183-00-00)	

NGR 34-012-004 **North Carolina A&T State University** **2940**
 Microelectronic components and metallic oxide studies and applications

<i>Period</i>	<i>Obligations</i>	
04/10/70-12/31/75	FY75: \$30,000	TOTAL: \$160,120
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Williams, L., Jr.	LARC/Fripp, A. L.	13-Physics
(23-371 340-00-00)	(10-371 340-00-00)	

NGR 34-012-013 **North Carolina A&T State University** **2941**
 Consolidation and analysis of ceramics data

<i>Period</i>	<i>Obligations</i>	
12/01/73-11/24/75	FY75:	TOTAL: \$23,199
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Craft, W. J.	JPL/Moynihan, P. I.	47-Materials Engr
(56-371 340-00-00)		

NGT 34-012-750 **North Carolina A&T State University** **2942**
 Training graduate students in space-related sciences and engineering

<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$14,000	TOTAL: \$14,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chandra, S.	HQ-P/Pohly, J. G.	49-Engr, NEC
(10-030 010-00-00)		

NSG 1147 **North Carolina A&T State University** **2943**
 Investigations of stimulated scattered processes as possible mechanisms in laser induced damage in nonlinear optical materials

<i>Period</i>	<i>Obligations</i>	
02/17/75-08/10/76	FY75: \$29,973	TOTAL: \$29,973
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Yu, C.	LARC/Allario, F.	13-Physics
(23-371 340-00-00)		

**NASA'S UNIVERSITY PROGRAM
NORTH CAROLINA (Continued)**

NAS 1-12833 North Carolina State Univ. - Raleigh 2944
Develop a thin film solid-state gaseous sensor
Period *Obligations*
12/10/73-05/31/75 FY75: TOTAL: \$24,974
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Monteith, L. K. LARC/Lassiter, W. S. 45-Elec Engr
(23-704 502-04-41)

NAS 6-2617 North Carolina State Univ. - Raleigh 2945
Wind wave current interaction studies
Period *Obligations*
02/07/75-09/30/75 FY75: \$27,273 TOTAL: \$27,273
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hiser, H. W. WFC/Stanley, H. R. 33-Oceanography
WFC/Huang, N. E.
(53-630 161-03-02)

NGL 34-002-017 North Carolina State Univ. - Raleigh 2946
Transverse instabilities of magnetically self-focusing streams in plasmas
Period *Obligations*
12/03/64-12/31/75 FY75: TOTAL: \$156,871
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bennett, W. H. HQ-NS/Thom, K. 13-Physics
(10-740 129-00-00) (45-720 112-00-00)

NGL 34-002-084 North Carolina State Univ. - Raleigh 2947
A theoretical study of the process and initiation of spallation of a plate subjected to hypervelocity impact
Period *Obligations*
10/22/68-12/31/73 FY75: TOTAL: \$65,644
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Chang, T. S. LARC/Thomson, R. G. 41-Aero Engr
(23-742 124-00-00)

NGL 34-002-095 North Carolina State Univ. - Raleigh 2948
Acoustic energy effects on sleep and human performance
Period *Obligations*
04/11/69-08/31/76 FY75: \$41,241 TOTAL: \$327,131
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Levere, T. E. LARC/Gunn, W. J. 69-Psych, NEC
(23-704 504-09-11) (23-704 504-09-02) (23-704 501-09-02)

NGR 34-002-108 North Carolina State Univ. - Raleigh 2949
Study of high-temperature materials for solid propellant rocket nozzle applications
Period *Obligations*
06/09/69-04/30/76 FY75: \$27,932 TOTAL: \$129,222
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Manning, C. R., Jr. LARC/Hagginbothom, W. K., Jr. 47-Materials Engr
LARC/Buckley, J. D.
(23-830 180-32-51) (23-830 180-00-00)

NGR 34-002-117 North Carolina State Univ. - Raleigh 2950
Relationship between metallurgical microstructure and electrical resistance
Period *Obligations*
09/15/69-12/31/74 FY75: TOTAL: \$31,816
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Benson, R. B. LARC/Gross, C. 13-Physics
(23-750 125-00-00)

NGR 34-002-175 North Carolina State Univ. - Raleigh 2951
Effect of hydrogen on mechanical properties of alloys containing a martensite phase
Period *Obligations*
12/01/71-12/31/75 FY75: TOTAL: \$72,653
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Isaacson, E. ARC/Williams, D. P. 47-Materials Engr
Stoker, J. J., Jr.
(21-704 501-21-21)

NGR 34-002-177 North Carolina State Univ. - Raleigh 2952
Analysis of nuclear induced plasmas by means of kinetic theory
Period *Obligations*
03/06/72-12/31/74 FY75: TOTAL: \$60,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hassan, H. A. HQ-RR/Thom, K. 13-Physics
(10-704 503-10-03)

NGR 34-002-188 North Carolina State Univ. - Raleigh 2953
Multiple-shaped beam antenna study
Period *Obligations*
10/18/72-12/31/75 FY75: \$7,650 TOTAL: \$43,008
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Herman, B. M. LARC/Croswell, W. F. 45-Elec Engr
LARC/Bailey, M. C.
(23-680 175-31-31) (23-680 160-20-54)

NGR 34-002-195 North Carolina State Univ. - Raleigh 2954
Theoretical analysis of current voltage characteristics of solar cells
Period *Obligations*
06/01/73-06/30/76 FY75: TOTAL: \$53,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hempfling, W. P. LERC/Godlewski, M. P. 45-Elec Engr
LERC/Brandhorst, H. W., Jr.
(22-704 502-05-50)

NGR 34-002-196 North Carolina State Univ. - Raleigh 2955
Photometry of vapor clouds released above the earth
Period *Obligations*
05/01/73-12/31/74 FY75: TOTAL: \$20,446
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Manring, E. R. HQ-SG/Dubin, M. 11-Astronomy
(10-850 385-45-00)

NGT 34-002-097 North Carolina State Univ. - Raleigh 2956
Training of graduate students in acoustics as related to aeronautical and space technology
Period *Obligations*
04/11/69-08/01/73 FY75: TOTAL: \$251,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hart, F. D. HQ-P/Carter, C. H. 49-Engr, NEC
(10-370 181-00-00)

NSG 1013 North Carolina State Univ. - Raleigh 2957
Modeling of slow flow electric discharge CO laser systems
Period *Obligations*
04/01/74-12/31/75 FY75: TOTAL: \$21,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hassan, H. A. LARC/Sidney, B. D. 31-Atmos Sci
(23-704 502-04-36)

**NASA'S UNIVERSITY PROGRAM
NORTH CAROLINA (Continued)**

NSG 1058 North Carolina State Univ. - Raleigh 2958
Analyses of nuclear induced plasmas by means of kinetic theory

<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/76	FY75: \$30,000	TOTAL: \$60,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hassan, H. A.	LARC/Hohl, F.	13-Physics
(23-704 502-10-01)		

NSG 1202 North Carolina State Univ. - Raleigh 2964
Study of the titanium dioxide-gallium arsenide interface

<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$15,000	TOTAL: \$15,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Littlejohn, M. A.	LARC/Miller, W. E.	13-Physics
Hauser, J. R.	LARC/Hendricks, H. D.	
(23-704 506-18-21)		

NSG 1077 North Carolina State Univ. - Raleigh 2959
Estimate the performance and dynamic response characteristics of an advanced technology light twin aircraft and compare with flight test results

<i>Period</i>	<i>Obligations</i>	
08/15/74-08/14/76	FY75: \$87,699	TOTAL: \$87,699
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Smetana, F. O.	LARC/Crane, H. L.	41-Aero Engr
	LARC/Stickle, J. W.	
(23-702 505-10-11)		

NSG 1205 North Carolina State Univ. - Raleigh 2965
Research program in aeroacoustics for noise control of general aviation aircraft

<i>Period</i>	<i>Obligations</i>	
07/01/75-06/30/76	FY75: \$29,000	TOTAL: \$29,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hart, F. D.	LARC/Mayes, W. H.	13-Physics
Bailey, J. R.	LARC/Stephens, D. G.	
(23-702 505-90-82)		

NSG 1116 North Carolina State Univ. - Raleigh 2960
Theoretical study of heterojunction and graded band gap type solar cells

<i>Period</i>	<i>Obligations</i>	
10/14/74-01/31/76	FY75: \$20,500	TOTAL: \$20,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hauser, J. R.	LARC/Hutchby, J. A.	45-Elec Engr
(23-704 506-18-21)		

NASW 2793 Shaw University 2966
The conduct of a five-day Symposium on Aeronautics and Space

<i>Period</i>	<i>Obligations</i>	
04/02/75-05/30/75	FY75: \$15,060	TOTAL: \$15,060
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	HQ-U/Dixon, J. T.	99-Multi-Discip
(10-030 010-00-00)		

NSG 1133 North Carolina State Univ. - Raleigh 2961
Wetting phenomena in metals and ceramics

<i>Period</i>	<i>Obligations</i>	
01/15/75-01/14/76	FY75: \$10,000	TOTAL: \$10,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Manning, C. R., Jr.	LARC/Oneal, R. L.	47-Materials Engr
	LARC/Kinard, W. H.	
(23-704 750-02-01)		

NSG 1033 Shaw University 2967
Polyimides systems research

<i>Period</i>	<i>Obligations</i>	
04/08/74-06/30/76	FY75:	TOTAL: \$33,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Chatterji, A. K.	LARC/Bell, V. L.	12-Chemistry
Panayappan, R. M.	LARC/Price, H. L.	
(23-371 340-00-00)		

NSG 1136 North Carolina State Univ. - Raleigh 2962
Long duration exposure facility experiments for early space shuttle missions

<i>Period</i>	<i>Obligations</i>	
01/15/75-01/14/76	FY75: \$9,998	TOTAL: \$9,998
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bailey, J. A.	LARC/Oneal, R. L.	47-Materials Engr
Whitfield, J. K.	LARC/Kinard, W. H.	
(23-704 750-02-01)		

NAS 8-26601 University of North Carolina - Chapel Hill 2968
Passive particle dosimetry

<i>Period</i>	<i>Obligations</i>	
11/17/70-07/31/75	FY75: \$10,000	TOTAL: \$39,792
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Childs, C. B.	MSFC/Parnell, T. A.	13-Physics
(62-980 975-72-51) (62-742 124-00-00)		

NSG 1191 North Carolina State Univ. - Raleigh 2963
Development of a computer program to use experimental pressure measurements in the calculation of heat transfer on shuttle-type configurations

<i>Period</i>	<i>Obligations</i>	
06/01/75-09/12/75	FY75: \$6,501	TOTAL: \$6,501
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dejarnette, F. R.	LARC/Walberg, G. D.	41-Aero Engr
	LARC/Dunavant, J. C.	
(23-704 502-37-01)		

NAS 9-14697 University of North Carolina - Chapel Hill 2969
Role of natriuretic peptides in the regulation of urinary sodium excretion

<i>Period</i>	<i>Obligations</i>	
06/23/75-06/23/78	FY75: \$50,000	TOTAL: \$50,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gitelman, H. J.	JSC/Leach, C. S.	59-Life Sci, NEC
(72-970 970-51-16)		

**NASA'S UNIVERSITY PROGRAM
NORTH CAROLINA (Continued)**

NORTH DAKOTA

NGR 35-001-012 North Dakota State University 2970
Quantitation of buried contamination by the use of solvents
Period *Obligations*
06/01/73-05/31/75 FY75: TOTAL: \$61,418
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hill, T. W. HQ-SL/Hall, L. B. 12-Chemistry
(10-840 193-58-62) (10-870 189-00-00) (10-870 191-00-00)

OHIO

NGR 36-017-004 Bowling Green State University 2971
Genetic effect of space on cells
Period *Obligations*
09/01/73-12/31/75 FY75: \$30,000 TOTAL: \$65,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Oster, I. I. ARC/Miquel, J. 51-Biology
(21-970 970-21-62)

NSG 7022 Bowling Green State University 2972
A radially streaming particle model for Seyfert galaxy nuclei and quasistellar objects
Period *Obligations*
07/01/74-06/30/75 FY75: TOTAL: \$15,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ptak, R. L. HQ-SG/Bogges, N. W. 11-Astronomy
Stoner, R. E. HQ-SG/Roman, N. G.
(10-850 188-41-51)

NAS 8-29707 Case Western Reserve University 2973
Study of high energy extragalactic sources
Period *Obligations*
04/13/73-10/12/73 FY75: TOTAL: \$3,500
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bidelman, W. MSFC/Wdowiak, T. J. 11-Astronomy
MSFC/Miller, E. R.
(62-850 188-00-00)

NGL 36-003-002 Case Western Reserve University 2974
Research on methods of systematic structural synthesis for digital computing equipment
Period *Obligations*
12/01/61-06/01/74 FY75: TOTAL: \$657,136
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kicher, T. P. LARC/Stroud, W. J. 41-Aero Engr
Fox, R. L. (23-742 124-00-00) (23-760 126-00-00)

NGL 36-003-064 Case Western Reserve University 2975
Basic scientific research in fluid physics
Period *Obligations*
06/14/65-05/31/77 FY75: \$75,922 TOTAL: \$1,114,764
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Reshotko, E. LERC/Nichols, L. D. 19-Phys Sci, NEC
(22-704 506-25-11) (22-704 501-00-00) (22-704 501-04-03)

NGL 36-003-094 Case Western Reserve University 2976
The effects of deformation on dispersion
Period *Obligations*
10/18/66-06/30/76 FY75: \$32,850 TOTAL: \$221,570
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ebert, L. J. LERC/Quatinetz, M. 47-Materials Engr
(22-702 505-01-11) (22-704 501-01-06)

NGL 36-027-057 Case Western Reserve University 2977
Lunar sample analysis
Period *Obligations*
06/30/72-06/30/75 FY75: TOTAL: \$150,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Radcliffe, S. V. JSC/Harris, J. W. 12-Chemistry
(72-810 388-10-01)

NGR 36-027-038 Case Western Reserve University 2978
Boundary layer control applied to shock wave boundary layer interactions
Period *Obligations*
06/18/71-12/31/74 FY75: TOTAL: \$40,919
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Reshotko, E. LERC/Anderson, B. H. 41-Aero Engr
(22-760 126-00-00)

NGR 36-027-050 Case Western Reserve University 2979
Catalysts for electrochemical generation of oxygen
Period *Obligations*
02/22/72-04/01/76 FY75: \$45,000 TOTAL: \$165,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Yeager, E. ARC/Quattrone, P. D. 12-Chemistry
O'Grady, W. E.
Cahan, B. D.
(21-970 970-22-21)

NGR 36-027-051 Case Western Reserve University 2980
Stress corrosion cracking & hydrogen embrittlement
Period *Obligations*
06/02/72-04/01/76 FY75: TOTAL: \$45,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hehemann, R. H. LERC/Gray, H. R. 47-Materials Engr
LERC/Andrews, C. W.
(22-704 501-21-23)

NGR 36-027-052 Case Western Reserve University 2981
Electrical generation of oxygen
Period *Obligations*
04/17/72-08/31/75 FY75: TOTAL: \$45,328
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Yeager, E. ARC/Quattrone, P. D. 12-Chemistry
(21-970 970-22-00)

NGR 36-027-053 Case Western Reserve University 2982
Microelectronic bioinstrumentation systems
Period *Obligations*
04/27/72-10/01/75 FY75: \$50,000 TOTAL: \$183,300
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ko, W. H. ARC/Fryer, T. B. 59-Life Sci, NEC
You, E. T. (21-970 970-23-30) (21-970 970-23-00)

NASA'S UNIVERSITY PROGRAM

OHIO (Continued)

NGR 36-027-064	Case Western Reserve University	2983			
Study of effects of layer control on shock wave turbulent boundary layer interactions in supersonics inlets					
<i>Period</i>		<i>Obligations</i>			
08/01/73-07/31/76	FY75: \$29,946	TOTAL: \$61,746			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Reshotko, E. (22-702 505-04-11)	LERC/Bishop, A. R. (22-704 501-24-05)	41-Aero Engr			
NGR 36-027-068	Case Western Reserve University	2984			
Far infrared maser communications technology					
<i>Period</i>		<i>Obligations</i>			
05/13/74-11/30/75	FY75: \$50,000	TOTAL: \$75,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Pao, Y. H. Claspy, P. C. (51-620 650-60-12)	GSFC/McAvoy, N.	13-Physics			
NGT 36-027-011	Case Western Reserve University	2985			
Summer program of NASA-ASEE summer faculty fellowships					
<i>Period</i>		<i>Obligations</i>			
12/16/69-03/31/76	FY75: \$124,500	TOTAL: \$652,495			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Prahl, J. M. (10-704 501-24-11)	HQ-P/Carter, C. H. (10-704 506-16-21)	49-Engr, NEC (10-371 340-00-00)			
NSG 1069	Case Western Reserve University	2986			
Application of interactive computer graphics to aircraft structural analysis and aircraft simulation					
<i>Period</i>		<i>Obligations</i>			
07/01/74-12/31/75	FY75:	TOTAL: \$55,024			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Lynch, W. C. (23-704 504-39-11)	LARC/Smith, R. E. LARC/Shoosmith, J. N.	99-Multi-Discip			
NSG 3009	Case Western Reserve University	2987			
An X-ray photoelectric spectroscopy study of nickel and nickel-base alloy surface alteration in simulated hot corrosion conditions					
<i>Period</i>		<i>Obligations</i>			
06/01/74-05/31/76	FY75: \$30,000	TOTAL: \$55,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Mateescu, G. D. (22-704 502-01-02)	LERC/Kohl, F. J. LERC/Stearns, C. A.	12-Chemistry			
NSG 3027	Case Western Reserve University	2988			
Processing studies on non-oxide ceramics					
<i>Period</i>		<i>Obligations</i>			
09/01/74-08/31/77	FY75:	TOTAL: \$46,700			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Mitchell, T. E. Ever, H. H. (22-704 501-15-83)	LERC/Probst, H. B. LERC/Ashbrook, R. L.	47-Materials Engr			
NSG 3040	Case Western Reserve University	2989			
Heat transfer characteristics of porous materials					
<i>Period</i>		<i>Obligations</i>			
10/01/74-09/30/75	FY75: \$25,000	TOTAL: \$25,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Dybbs, A. (22-704 506-21-53)	LERC/Fortini, A.	47-Materials Engr			
NSG 3053	Case Western Reserve University	2990			
Convection phenomena at reduced gravity					
<i>Period</i>		<i>Obligations</i>			
06/01/75-05/31/76	FY75: \$25,000	TOTAL: \$25,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Ostrach, S. (22-704 750-01-51)	LERC/Labus, T. L.	49-Engr, NEC			
NSG 3058	Case Western Reserve University	2991			
Nacelle boattail flows					
<i>Period</i>		<i>Obligations</i>			
03/01/75-03/01/76	FY75: \$29,621	TOTAL: \$29,621			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Reshotko, E. (22-702 505-04-11)	LERC/Bober, L. J.	41-Aero Engr			
NSG 3062	Case Western Reserve University	2992			
Interactive compressor flow-field calculations					
<i>Period</i>		<i>Obligations</i>			
02/01/75-01/31/78	FY75: \$55,986	TOTAL: \$55,986			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Reshotko, E. (22-702 505-90-9X)	LERC/Sockol, P. M.	41-Aero Engr			
NSG 7035	Case Western Reserve University	2993			
Development of a generalized technology for life prediction in the high-temperature creep and fatigue range					
<i>Period</i>		<i>Obligations</i>			
05/01/74-04/30/76	FY75:	TOTAL: \$67,216			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Manson, S. S. (22-702 505-01-21)	HQ-RW/Maltz, J. HQ-RW/Deutsch, G. C.	47-Materials Engr (10-704 502-22-03)			
NGR 36-033-002	Central State University - Ohio	2994			
Determination of water quality in Lake Erie via satellite scanning spectroscopy					
<i>Period</i>		<i>Obligations</i>			
02/28/73-09/30/75	FY75:	TOTAL: \$39,809			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Rubin, D. (22-371 340-00-00)	LERC/Raquet, C. A. (10-371 340-00-00)	51-Biology			
NGR 36-033-003	Central State University - Ohio	2995			
Effects of some selected atmospheric pollutants on animal population surrounding the Cleveland area					
<i>Period</i>		<i>Obligations</i>			
04/25/73-09/30/75	FY75: \$20,826	TOTAL: \$40,782			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Craft, T. J., Sr. Johnson, M. A., Jr. (22-371 340-00-00)	LERC/Fordyce, J. S. LERC/King, R. B. (10-371 340-00-00)	51-Biology			
NSG 2074	Central State University - Ohio	2996			
Circadian toxicity of cerium in rat liver					
<i>Period</i>		<i>Obligations</i>			
03/01/75-03/01/76	FY75: \$19,990	TOTAL: \$19,990			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Nduaguba, J. C. (21-371 340-00-00)	ARC/Winget, C. M. ARC/Danellis, J. V.	51-Biology			

**NASA'S UNIVERSITY PROGRAM
OHIO (Continued)**

NAS 3-18547	Cleveland State University	2997			
Synthesis and optimization of spur gear tooth profile shapes for high load capacity					
<i>Period</i>	<i>Obligations</i>				
06/04/74-09/23/77	FY75: \$59,980	TOTAL: \$59,980			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Kasuba, R.	LERC/Townsend, D. P.	46-Mech Engr			
(22-704 501-24-10)					
NAS 5-20521	Ohio State University	3004			
Space shuttle experiment					
<i>Period</i>	<i>Obligations</i>				
05/23/74-10/31/75	FY75: \$6,800	TOTAL: \$46,800			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Founty, R. A.	GSFC/Hirschmann, E.	39-Env Sci, NEC			
(51-601 645-25-07)					
NGL 36-025-001	Cleveland State University	2998			
Detection characteristics of germanium and silicon					
<i>Period</i>	<i>Obligations</i>				
03/26/69-04/01/74	FY75: \$69,997	TOTAL: \$69,997			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Casper, K.	LERC/Barile, S.	13-Physics			
(22-710 120-00-00)					
NGL 36-025-001	Cleveland State University	2998			
Detection characteristics of germanium and silicon					
<i>Period</i>	<i>Obligations</i>				
03/26/69-04/01/74	FY75: \$69,997	TOTAL: \$69,997			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Casper, K.	LERC/Barile, S.	13-Physics			
(22-710 120-00-00)					
NAS 5-21983	Ohio State University	3005			
ATS-F millimeter wave experiment					
<i>Period</i>	<i>Obligations</i>				
01/31/74-01/31/76	FY75: \$4,995	TOTAL: \$254,590			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Levis, C. A.	GSFC/Hirschmann, E.	31-Atmos Sci			
Hodge, D. B.					
(51-620 643-10-01)	(51-620 643-00-00)				
NAS 6-2484	Ohio State University	3006			
Investigation to improve existing gravity models, using GEOS altimeter data					
<i>Period</i>	<i>Obligations</i>				
04/15/74-04/14/77	FY75: \$40,000	TOTAL: \$60,100			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Rapp, R. H.	WFC/Stanley, H. R.	32-Geological Sci			
	WFC/Rossi, L. C.				
(53-630 369-07-01)					
NAS 6-2484	Ohio State University	3006			
Investigation to improve existing gravity models, using GEOS altimeter data					
<i>Period</i>	<i>Obligations</i>				
04/15/74-04/14/77	FY75: \$40,000	TOTAL: \$60,100			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Rapp, R. H.	WFC/Stanley, H. R.	32-Geological Sci			
	WFC/Rossi, L. C.				
(53-630 369-07-01)					
NSG 1030	Cleveland State University	2999			
Global pollution model for CO, CH4 and H2CO					
<i>Period</i>	<i>Obligations</i>				
05/01/74-08/14/74	FY75: \$8,368	TOTAL: \$8,368			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Peters, L. K.	LARC/Reichle, H. G., Jr.	31-Atmos Sci			
	LARC/Orr, H. D.				
(23-680 176-21-31)					
NSG 3026	Hiram College	3000			
Residual stress and crystallite size change as a result of rubbing in polycrystalline metals					
<i>Period</i>	<i>Obligations</i>				
07/01/74-12/31/75	FY75: \$18,500	TOTAL: \$18,500			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Wheeler, D. R.	LERC/Buckley, D. H.	47-Materials Engr			
	LERC/Spalvins, T.				
(22-704 502-01-07)					
NSG 3026	Hiram College	3000			
Residual stress and crystallite size change as a result of rubbing in polycrystalline metals					
<i>Period</i>	<i>Obligations</i>				
07/01/74-12/31/75	FY75: \$18,500	TOTAL: \$18,500			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Wheeler, D. R.	LERC/Buckley, D. H.	47-Materials Engr			
	LERC/Spalvins, T.				
(22-704 502-01-07)					
NGR 36-007-027	Kent State University	3001			
Low temperature specific heats of certain rare earth trihydrides: crystal field and magnetic ordering effects					
<i>Period</i>	<i>Obligations</i>				
07/22/71-09/30/74	FY75: \$25,761	TOTAL: \$25,761			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Johnson, D. L.	LERC/Brown, G. V.	13-Physics			
(22-704 503-10-03)					
NSG 2013	Kent State University	3002			
Transport of trace contaminants through porous media					
<i>Period</i>	<i>Obligations</i>				
03/15/74-11/16/75	FY75: \$27,500	TOTAL: \$27,500			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Madex, R.	ARC/Quattrone, P. D.	12-Chemistry			
(21-970 970-22-21)					
NAS 9-14538	Miami University	3003			
Research on a possible mechanism of 0-g sickness					
<i>Period</i>	<i>Obligations</i>				
02/15/75-02/14/76	FY75: \$29,776	TOTAL: \$29,776			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Parker, D. E.	JSC/Homick, J. L.	59-Life Sci, NEC			
	JSC/Reschke, M. F.				
(72-970 970-51-11)					
NGL 36-008-051	Ohio State University	3009			
Stress corrosion cracking of titanium alloys					
<i>Period</i>	<i>Obligations</i>				
06/23/66-06/01/79	FY75: \$208,696	TOTAL: \$208,696			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Beck, F. H.	LERC/Gray, H. R.	47-Materials Engr			
(22-740 134-00-00)					
NGL 36-008-093	Ohio State University	3010			
Data analysis for the national geodetic satellite program					
<i>Period</i>	<i>Obligations</i>				
08/23/67-06/30/76	FY75: \$555,518	TOTAL: \$555,518			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Mueller, I. I.	HQ-ES/Murphy, J. P.	19-Phys Sci, NEC			
(10-630 855-22-00)					

**NASA'S UNIVERSITY PROGRAM
OHIO (Continued)**

NGR 36-009-017 Ohio University **3024**
Air transportation problems with emphasis on general aviation avionics

<i>Period</i>	<i>Obligations</i>	
02/26/71-09/01/77	FY75: \$50,000	TOTAL: \$282,125
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McFarland, R. H.	LARC/MacE, W. D.	45-Elec Engr
Burhans, R. W.		
(23-702 505-07-12)	(23-750 125-00-00)	(23-750 135-00-00)

NSG 2061 University of Akron **3025**
Study of friction and abrasion of aircraft tire tread materials

<i>Period</i>	<i>Obligations</i>	
04/01/75-04/01/76	FY75: \$29,748	TOTAL: \$29,748
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gent, A. N.	ARC/Golub, M. A.	13-Physics
Henry, R. L.	ARC/Parker, J. A.	
(21-702 505-08-31)		

NAS 2-7850 University of Cincinnati **3026**
Theoretical and experimental study of aerodynamics

<i>Period</i>	<i>Obligations</i>	
10/01/73-10/01/76	FY75:	TOTAL: \$94,990
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tabakoff, W.	ARC/Burke, J. A.	41-Aero Engr
(21-704 501-17-00)		

NGR 36-004-054 University of Cincinnati **3027**
Investigations in superconductivity

<i>Period</i>	<i>Obligations</i>	
06/07/71-05/31/74	FY75:	TOTAL: \$49,759
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Joiner, W. C.	LERC/Brown, G. V.	13-Physics
(22-704 503-10-03)		

NGR 36-004-055 University of Cincinnati **3028**
Erosion phenomena within radial turbines and methods for its reduction

<i>Period</i>	<i>Obligations</i>	
05/04/71-12/31/74	FY75:	TOTAL: \$45,515
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tabakoff, W.	LERC/Haas, J. E.	46-Mech Engr
(22-704 501-15-83)		

NGR 36-004-056 University of Cincinnati **3029**
Effects of group I impurities in II-VI compounds: sodium doped cadmium sulfide and zinc oxide

<i>Period</i>	<i>Obligations</i>	
09/01/71-05/31/74	FY75:	TOTAL: \$85,491
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harness, D.	LERC/Olson, W. T.	47-Materials Engr
Weisman, J.		
(22-704 502-10-02)		

NGR 36-004-061 University of Cincinnati **3030**
Research on methods of estimating stability and control derivatives of aircraft with flexible structures

<i>Period</i>	<i>Obligations</i>	
04/21/72-08/31/76	FY75: \$24,991	TOTAL: \$83,464
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wells, W. R.	LARC/Queijo, M. J.	41-Aero Engr
	LARC/Suit, W. T.	
(23-702 505-90-82)	(23-704 501-15-82)	(23-704 501-26-05)

NGR 36-004-064 University of Cincinnati **3031**
Two-dimensional flow losses of a turbine with boundary layer injection

<i>Period</i>	<i>Obligations</i>	
06/13/72-09/30/76	FY75:	TOTAL: \$44,760
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tabakoff, W.	LERC/Prust, H. W., Jr.	41-Aero Engr
(22-704 501-24-03)	(22-702 741-00-00)	

NGR 36-004-065 University of Cincinnati **3032**
NASA traineeship program in aeronautics

<i>Period</i>	<i>Obligations</i>	
07/13/72-08/31/75	FY75:	TOTAL: \$72,822
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sobel, L. H.	LARC/Williams, J. G.	49-Engr, NEC
	LARC/Mikulas, M. M.	
(23-704 502-22-10)	(23-704 501-22-03)	(23-704 501-00-00)

NGR 36-004-068 University of Cincinnati **3033**
Analytical earth satellite theory to be used for definitive orbit determination and geophysical studies

<i>Period</i>	<i>Obligations</i>	
08/15/73-03/31/75	FY75:	TOTAL: \$19,180
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Danielli, J. F.	GSFC/Lancaster, E. R.	11-Astronomy
(51-500 310-10-22)		

NGR 36-004-069 University of Cincinnati **3034**
Three-dimensional boundary layer problems related to space shuttle configurations

<i>Period</i>	<i>Obligations</i>	
11/17/72-10/14/74	FY75:	TOTAL: \$11,925
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Davis, R. T.	LARC/Harris, J. E.	41-Aero Engr
	LARC/Beckwith, I. E.	
(23-704 502-37-01)		

NGR 36-004-075 University of Cincinnati **3035**
Jupiter space missions support, orbit computation programs and new astrophysical plate constants

<i>Period</i>	<i>Obligations</i>	
11/01/73-05/31/76	FY75: \$21,108	TOTAL: \$31,108
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Herget, P.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Fellows, R. F.	
(10-840 196-41-85)		

NSG 1185 University of Cincinnati **3036**
Thermal analysis of composite panels

<i>Period</i>	<i>Obligations</i>	
05/01/75-09/30/75	FY75: \$17,355	TOTAL: \$17,355
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nayfeh, A. H.	LARC/Mikulas, M. M.	49-Engr, NEC
	LARC/Williams, J. C.	
(23-702 743-01-01)	(23-704 506-17-13)	

NSG 1208 University of Cincinnati **3037**
Numerical study of supersonic turbulent flow over small protuberances

<i>Period</i>	<i>Obligations</i>	
07/01/75-06/30/76	FY75: \$22,896	TOTAL: \$22,896
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Polak, A.	LARC/Dunavant, J. C.	41-Aero Engr
Werle, M. J.		
(23-704 502-37-01)	(23-704 506-26-30)	

NASA'S UNIVERSITY PROGRAM

OHIO (Continued)

NSG 3022	University of Cincinnati	3038	NAS 3-17826	University of Toledo	3045
Investigation of a new family of semiconductor diodes based upon bulk effects of deep impurities			Benefit-cost methodology study with example application		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/76	FY75:	TOTAL: \$36,900	05/31/74-01/31/75	FY75:	TOTAL: \$64,850
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Henderson, H. T.	LERC/Sundberg, G. R.	45-Elec Engr	Leininger, G. G.	LERC/Ramler, J. R.	49-Engr, NEC
(22-704 502-25-71)	LERC/Myers, I. T.		(22-620 643-60-01)		
NSG 3024	University of Cincinnati	3039	NGR 36-010-022	University of Toledo	3046
Research into the use of silane pyrolytic deposition methods for SiO ₂ construction of stable high energy density capacitors			Scattering properties of interstellar dust particles		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/76	FY75:	TOTAL: \$23,100	04/17/72-10/15/74	FY75:	TOTAL: \$20,612
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nevin, J. H.	LERC/Grier, N. T.	45-Elec Engr	Witt, A. D.	HQ-SG/Dubin, M.	11-Astronomy
Henderson, H. T.	LERC/Myers, I. T.		(10-850 385-45-00)		
(22-704 502-25-71)					
NSG 3045	University of Cincinnati	3040	NGR 36-010-024	University of Toledo	3047
A study of parameters affecting emissions from turbine engines			Adaptive system optimization for integrated air-breathing engine systems		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
04/02/75-07/01/76	FY75: \$33,546	TOTAL: \$33,546	09/01/71-09/01/75	FY75:	TOTAL: \$54,400
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kauffman, C. W.	LERC/Jones, R. E.	41-Aero Engr	Leininger, G. G.	LERC/Willoh, R. G.	49-Engr, NEC
(22-702 505-04-31)	LERC/Rudey, R. A.		(22-704 501-15-83)		
NSG 3066	University of Cincinnati	3041	NGR 36-010-031	University of Toledo	3048
Study of the fluid mechanics of a radial turbine scroll			Study of magnetic AP variable stars; the alpha Persei cluster		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
07/01/75-06/30/78	FY75: \$45,378	TOTAL: \$45,378	05/01/74-05/31/75	FY75:	TOTAL: \$15,888
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tabakoff, W.	LERC/Glassman, A. J.	41-Aero Engr	Molnar, M. R.	GSFC/Kupperian, J. E.	11-Astronomy
(22-702 505-04-22)	(22-702 505-90-83)		(51-850 831-43-00)		
NAS 3-19699	University of Dayton	3042	NSG 3063	University of Toledo	3049
ATS user experiments history			Multivariable control theory with application to airbreathing propulsion systems		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/15/75-02/14/76	FY75: \$46,600	TOTAL: \$46,600	06/01/75-06/01/76	FY75: \$25,000	TOTAL: \$25,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Engler, N. A.	LERC/Hein, G. F.	73-History	Leininger, G. G.	LERC/Lehtinen, B.	45-Elec Engr
(22-601 644-04-02)			(22-702 505-05-11)		
NAS 6-2456	University of Dayton	3043	NSG 5006	University of Toledo	3050
Atmospheric phenomena associated with falling spheres			Investigation of an AP variable star		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
03/25/74-03/25/76	FY75: \$45,335	TOTAL: \$61,965	05/01/74-08/01/75	FY75:	TOTAL: \$2,050
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Luers, J. K.	WFC/Duke, J. R.	31-Atmos Sci	Molnar, M. R.	GSFC/Kupperian, J. E.	11-Astronomy
(53-680 607-07-00)	WFC/Schmidlin, F. J.		(51-850 831-43-00)		
NAS 8-31294	University of Dayton	3044	NSG 7041	University of Toledo	3051
Examination of requirements and methods for reporting atmospheric information			Measurement of the ultraviolet surface brightness of reflection nebulae with the Dutch national satellite		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/16/75-01/16/76	FY75: \$45,639	TOTAL: \$45,639	12/15/74-06/14/76	FY75:	TOTAL: \$9,126
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Leurs, J. K.	MSFC/Camp, D. W.	41-Aero Engr	Witt, A. N.	HQ-SG/Roman, N. G.	11-Astronomy
(62-702 505-08-10)	MSFC/Cliff, W. C.		(10-850 385-41-00)	HQ-SG/Calahan, H. D.	

**NASA'S UNIVERSITY PROGRAM
OKLAHOMA (Continued)**

NAS 8-28659 University of Oklahoma - Norman 3065
Study and development of an acoustical radar system
Period *Obligations*
04/03/72-02/28/74 FY75: TOTAL: \$56,804
Prin. Invest. NASA Tech. Officer CASE Category
Inman, R. L. MSFC/Turner, R. E. 31-Atmos Sci
(62-763 133-00-00)

NAS 8-30175 University of Oklahoma - Norman 3066
Crossed beam spectrometer development; crossed beam spectroscopy in multicomponent gas flows
Period *Obligations*
02/25/69-12/31/73 FY75: TOTAL: \$144,801
Prin. Invest. NASA Tech. Officer CASE Category
Canfield, J. M. MSFC/Stephens, J. B. 41-Aero Engr
(62-750 125-00-00)

NAS 8-31333 University of Oklahoma - Norman 3067
Study of the nature of atmospheric variability represented by data obtained on AVE experiment
Period *Obligations*
02/27/75-02/27/76 FY75: \$19,995 TOTAL: \$19,995
Prin. Invest. NASA Tech. Officer CASE Category
Inman, R. L. MSFC/Turner, R. E. 31-Atmos Sci
MSFC/Vaughn, W. W.
(62-680 175-61-71)

NAS 8-31377 University of Oklahoma - Norman 3068
Integrating upper and lower atmospheric wind profiles and statistics
Period *Obligations*
03/17/75-03/16/76 FY75: \$24,995 TOTAL: \$24,995
Prin. Invest. NASA Tech. Officer CASE Category
Inman, R. L. MSFC/Cliff, W. C. 31-Atmos Sci
MSFC/Fichtl, G. H.
(62-920 989-13-00)

NAS 9-13360 University of Oklahoma - Norman 3069
Analysis of severe storm environments. Skylab investigation
Period *Obligations*
04/23/73-11/30/75 FY75: \$22,390 TOTAL: \$92,810
Prin. Invest. NASA Tech. Officer CASE Category
Sasaki, Y. JSC/Pitts, D. E. 31-Atmos Sci
(72-680 652-01-84) (72-680 177-91-00)

NSG 1183 University of Oklahoma - Norman 3070
Piezoresistive solid state pressure sensor
Period *Obligations*
06/01/75-05/31/76 FY75: \$38,095 TOTAL: \$38,095
Prin. Invest. NASA Tech. Officer CASE Category
Kahng, S. K. LARC/Gross, C. 45-Elec Engr
(23-704 502-03-53) (23-704 502-23-56) (23-704 506-18-21)

OREGON

NCA 2-85501 Oregon Graduate Center 3071
Investigation into the sex differences of the pituitary-adrenal system and adaptation to stress
Period *Obligations*
09/01/74-08/31/75 FY75: \$3,000 TOTAL: \$3,000
Prin. Invest. NASA Tech. Officer CASE Category
Swanson, L. W. ARC/Zill, L. P. 51-Biology
(21-970 970-21-16)

NSG 3054 Oregon Graduate Center 3072
Fabrication and surface characterization of composite refractory compounds suitable for thermionic converters
Period *Obligations*
12/01/74-12/01/75 FY75: \$59,320 TOTAL: \$59,320
Prin. Invest. NASA Tech. Officer CASE Category
Swanson, L. W. LERC/Morris, J. F. 47-Materials Engr
McNeely, D. R.
(22-704 506-24-21)

NAS 5-21831 Oregon State University 3073
Two ERTS-A data user investigations
Period *Obligations*
09/07/72-03/01/74 FY75: TOTAL: \$353,000
Prin. Invest. NASA Tech. Officer CASE Category
Smionson, G. H. GSFC/Crump, E. W. 39-Env Sci, NEC
Schrumph, B. J. GSFC/Ragland, T. M.
(51-680 641-00-00)

NAS 5-22319 Oregon State University 3074
Interrelationship of particles dynamics and color
Period *Obligations*
04/11/75-04/11/76 FY75: \$23,548 TOTAL: \$23,548
Prin. Invest. NASA Tech. Officer CASE Category
Zumeveld, R. V. GSFC/Mueller, J. L. 33-Oceanography
(51-630 161-03-02)

NGL 38-002-020 Oregon State University 3075
Study of elemental abundances in meteorite and terrestrial matter
Period *Obligations*
08/26/66-02/28/78 FY75: \$61,500 TOTAL: \$413,622
Prin. Invest. NASA Tech. Officer CASE Category
Schmitt, R. A. HQ-SM/Bryson, R. P. 32-Geological Sci
HQ-SM/Roberson, F. I.
(10-810 195-20-04) (10-860 849-00-00)

NGL 38-002-039 Oregon State University 3076
Lunar sample analysis
Period *Obligations*
01/19/71-01/31/78 FY75: \$70,500 TOTAL: \$348,250
Prin. Invest. NASA Tech. Officer CASE Category
Schmitt, R. A. JSC/Harris, J. W. 13-Physics
(72-810 388-10-02)

**NASA'S UNIVERSITY PROGRAM
OREGON (Continued)**

NGL 38-002-053 Oregon State University **3077**
Development and operation of an environmental remote sensing applications laboratory

<i>Period</i>	<i>Obligations</i>	
03/16/72-03/31/78	FY75: \$100,000	TOTAL: \$475,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Schrumpf, B. J.	HQ-P/Vitale, J. A.	39-Env Sci, NEC
(10-371 340-00-00)		

NAS 9-9690 University of Oregon - Eugene **3078**
Operation and maintenance of NASA/MSC geophysical branch mobile laboratory

<i>Period</i>	<i>Obligations</i>	
06/24/69-06/30/76	FY75:	TOTAL: \$60,763
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Blank, H. R.	JSC/Teegarden, D. L., Jr.	32-Geological Sci
(72-910 914-50-00)	(72-910 914-40-00)	

NGL 38-003-022 University of Oregon - Eugene **3079**
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
02/09/71-01/31/78	FY75: \$73,215	TOTAL: \$355,615
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Weill, D. F.	JSC/Harris, J. W.	13-Physics
(72-810 388-10-01)		

NGR 38-003-020 University of Oregon - Eugene **3080**
Inspection of petrologically significant physical and chemical properties of the silicate melts

<i>Period</i>	<i>Obligations</i>	
06/01/70-05/31/77	FY75:	TOTAL: \$258,375
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Weill, D. F.	HQ-SM/Bryson, R. P.	32-Geological Sci
(10-810 195-42-68)	HQ-SM/Roberson, F. I.	

NGR 38-003-034 University of Oregon - Eugene **3081**
Measurements of far infrared upper atmosphere emission spectrum

<i>Period</i>	<i>Obligations</i>	
02/27/73-09/01/75	FY75: \$53,000	TOTAL: \$102,738
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Donnelly, R. J.	ARC/Cameron, R. M.	11-Astronomy
Holt, I.	ARC/Gillespie, C. M., Jr.	
Radostite, J.		
(21-850 352-00-00)	(21-850 352-02-03)	

NGR 38-003-036 University of Oregon - Eugene **3082**
Transition probability in multiply ionized atoms

<i>Period</i>	<i>Obligations</i>	
07/03/72-09/01/75	FY75: \$22,000	TOTAL: \$55,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Crasemann, B.	ARC/Whiting, E. E.	13-Physics
(21-704 506-16-12)	(21-704 502-01-02)	(21-704 502-00-00)

NAS 8-30887 University of Oregon-Health Sci. Ctr. **3083**
Electrokinetic characterization of aldehyde fixed red blood cells, kidney cells, lymphocytes and chamber wall coatings

<i>Period</i>	<i>Obligations</i>	
07/01/74-03/13/76	FY75: \$32,873	TOTAL: \$32,873
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Knox, R. J.	MSFC/Allen, R. E.	51-Biology
(62-930 966-30-00)	MSFC/Howell, E. S.	

NAS 8-31386 University of Oregon-Health Sci. Ctr. **3084**
Definition of performance specifications for automated analytical electrophoresis facility

<i>Period</i>	<i>Obligations</i>	
04/07/75-02/07/76	FY75: \$35,213	TOTAL: \$35,213
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Brooks, D. E.	MSFC/Ives, R. E.	59-Life Sci, NEC
Seaman, G. V.	MSFC/Allen, R. E.	
(62-630 179-42-20)		

PENNSYLVANIA

NAS 9-14640 Bryn Mawr College **3085**
ASTP/Cosmos fundulus embryo development experiments

<i>Period</i>	<i>Obligations</i>	
04/01/75-06/30/76	FY75: \$15,764	TOTAL: \$15,764
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Oppenheimer, J. M.	JSC/Hoffman, R. A.	51-Biology
(72-970 970-54-01)		

NSG 9005 Bryn Mawr College **3086**
Petrologic investigation of feldspathic rocks from the lunar highland

<i>Period</i>	<i>Obligations</i>	
06/15/74-02/29/76	FY75: \$4,426	TOTAL: \$7,426
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Crawford, M. L.	JSC/Harris, J. W.	13-Physics
(72-810 388-10-01)		

NGR 39-027-003 Bucknell University **3087**
Theoretical analysis of gas particle flow in rotating blade rows of turbo-machines with application of laser-Doppler velocimetry

<i>Period</i>	<i>Obligations</i>	
09/04/73-08/03/74	FY75:	TOTAL: \$14,448
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Maxwell, B. R.	LERC/Seasholtz, R. G.	49-Engr, NEC
(22-704 501-24-07)	LERC/Katsanis, T.	

NAS 3-18929 Carnegie - Mellon University **3088**
Evaluation of the mechanical properties of electro-slag refined iron alloys

<i>Period</i>	<i>Obligations</i>	
02/03/75-12/02/75	FY75: \$82,517	TOTAL: \$82,517
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bhat, G. K.	LERC/Witzke, W.	47-Materials Engr
(22-704 506-16-21)		

NGR 39-087-003 Carnegie - Mellon University **3089**
Investigation of the effects of microstructure on fracture toughness of high-strength alloys

<i>Period</i>	<i>Obligations</i>	
05/01/68-08/01/76	FY75: \$25,029	TOTAL: \$199,407
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Low, J. R., Jr.	LERC/Klopp, W. D.	47-Materials Engr
Psoida, J. A.	LERC/Brown, W. F., Jr.	
(22-704 506-16-21)		

**NASA'S UNIVERSITY PROGRAM
PENNSYLVANIA (Continued)**

NGR 39-087-021 Carnegie - Mellon University **3090**
Studies of heterodyne solar cell performance
Period *Obligations*
03/26/70-04/30/76 FY75: \$38,545 TOTAL: \$217,271
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Milnes, A. G. LARC/Walker, G. H. 13-Physics
Feucht, D. L. LARC/Conway, E. J.
(23-704 506-16-13) (23-740 114-00-00) (23-740 129-00-00)

NGR 39-087-047 Carnegie - Mellon University **3091**
Investigation of the effects of microstructure on the fracture toughness of high strength titanium alloys
Period *Obligations*
10/09/72-11/30/75 FY75: \$22,436 TOTAL: \$75,123
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Low, J. R., Jr. LERC/Klopp, W. D. 47-Materials Engr
Van Stone, R. H. LERC/Brown, W. F., Jr.
(22-704 506-16-21) (22-704 502-22-03)

NGR 39-087-053 Carnegie - Mellon University **3092**
Special finite elements for cracks in elasto-plastic media
Period *Obligations*
09/01/73-10/01/76 FY75: \$38,784 TOTAL: \$66,436
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Swedlow, J. L. LERC/Srawley, J. E. 46-Mech Engr
Osias, J. R. LERC/Gross, B.
(22-702 505-01-21) (22-704 502-22-03)

NSG 3023 Carnegie - Mellon University **3093**
Steady and dynamic performance of liquid face seals
Period *Obligations*
07/01/74-06/28/77 FY75: TOTAL: \$45,800
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hughes, W. F. LERC/Ludwig, L. P. 46-Mech Engr
LERC/Zuk, J.
(22-704 501-15-83)

NAS 1-11871 Drexel University **3094**
Investigation of ESSA VII radiation data for use in long term earth balance experiment
Period *Obligations*
07/25/72-05/14/76 FY75: \$22,000 TOTAL: \$96,865
Prin. Invest. *NASA Tech. Officer* *CASE Category*
House, F. B. LARC/Sweet, G. E. 31-Atmos Sci
Kohri, W. J.
(23-680 175-21-32) (23-680 160-44-71)

NAS 8-31235 Drexel University **3095**
Atmospheric variability experiment study using a numerical weather prediction model
Period *Obligations*
02/03/75-02/02/76 FY75: \$24,900 TOTAL: \$24,900
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kreitzberg, C. W. MSFC/Turner, R. E. 31-Atmos Sci
MSFC/Vaughn, W. W.
(62-680 175-61-71)

NAS 5-20865 Hahnemann Medical College & Hospital **3096**
Detection of bacteria in urine by an ATP luciferase procedure
Period *Obligations*
10/18/74-04/18/77 FY75: \$108,803 TOTAL: \$108,803
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gutekunst, R. R. GSFC/Picciolo, G. L. 59-Life Sci, NEC
(51-250 141-95-02) (51-250 141-95-01)

NAS 8-28654 Lehigh University **3097**
Electrophoresis flight experiment
Period *Obligations*
04/27/72-11/14/75 FY75: \$49,980 TOTAL: \$150,266
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Vanderhoff, J. W. MSFC/Bond, J. B. 47-Materials Engr
Micale, F. J. MSFC/Allen, R. E.
(62-630 179-13-11)

NCA 2-80501 Lehigh University **3098**
Development of stress corrosion cracking test methods
Period *Obligations*
11/01/74-10/31/75 FY75: \$10,000 TOTAL: \$10,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wei, R. P. ARC/Zill, L. P. 47-Materials Engr
(21-704 501-21-21)

NGL 39-007-007 Lehigh University **3099**
Investigation of solidification structure & eutectic alloys including consideration of properties control
Period *Obligations*
02/17/65-07/01/78 FY75: \$1 TOTAL: \$417,268
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kraft, R. W. LERC/Ashbrook, R. L. 47-Materials Engr
Hertzberg, R. W.
Notis, M. R.
(22-704 501-01-06) (10-740 129-00-00)

NGR 39-007-011 Lehigh University **3100**
Investigation of fatigue-crack propagation in thin plates and shells
Period *Obligations*
11/30/64-06/30/76 FY75: \$25,000 TOTAL: \$337,445
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Erdogan, F. LARC/Illeg, W. 21-Mathematics
LARC/Fichter, W. B.
(23-702 505-02-31) (23-704 501-22-02) (10-760 126-00-00)

NGR 39-007-043 Lehigh University **3101**
Shock and thermal history of unusual iron meteorites
Period *Obligations*
05/24/71-05/31/77 FY75: TOTAL: \$88,365
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Goldstein, J. I. HQ-SM/Kosofsky, L.J. 32-Geological Sci
HQ-SM/Roberson, F. I.
(10-810 195-42-67)

NGR 39-007-056 Lehigh University **3102**
Lunar sample analysis
Period *Obligations*
01/12/71-01/31/76 FY75: \$54,065 TOTAL: \$198,985
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Goldstein, J. I. JSC/Harris, J. W. 12-Chemistry
(72-810 388-10-01)

NGR 39-007-061 Lehigh University **3103**
Investigation of generation of X-rays in close binary stars
Period *Obligations*
03/10/73-06/30/76 FY75: \$1,000 TOTAL: \$28,965
Prin. Invest. *NASA Tech. Officer* *CASE Category*
McCluskey, G. E., Jr. JSC/Kondo, Y. 11-Astronomy
(72-850 188-41-55) (72-910 914-00-00) (72-850 188-41-51)

**NASA'S UNIVERSITY PROGRAM
PENNSYLVANIA (Continued)**

NGL 39-009-002 Pennsylvania State University 3118
Study of ionospheric electron content & upper ionosphere ionic processes by means of satellite radio transmissions
Period *Obligations*
11/01/60-09/30/75 FY75: TOTAL: \$668,245
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ross, W. J. HQ-SG/Schmerling, E. R. 13-Physics
HQ-SG/Kavanagh, L. D., Jr.
(10-850 188-36-56) (10-850 188-00-00)

NGL 39-009-003 Pennsylvania State University 3119
Research on electron densities in upper ionosphere, including studies of rocket & separating capsule experimental techniques
Period *Obligations*
03/01/61-10/31/77 FY75: \$100,000 TOTAL: \$1,776,661
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Nisbet, J. S. HQ-SG/Berko, F. W. 13-Physics
HQ-SG/Schmerling, E. R.
(10-850 188-36-56) (10-850 188-00-00)

NGL 39-009-007 Pennsylvania State University 3120
Investigation & analysis of flow phenomena of secondary motions in axial flow inducers
Period *Obligations*
12/15/63-02/27/76 FY75: TOTAL: \$279,750
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lakshminarayana, B. LERC/Britsch, W. R. 41-Aero Engr
(10-710 128-00-00) (22-710 128-00-00)

NGL 39-009-010 Pennsylvania State University 3121
Research to establish criteria for recognition of ancient meteorite impact craters whose characteristic surface forms have been obliterated by erosion
Period *Obligations*
08/08/63-12/31/75 FY75: TOTAL: \$169,563
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gold, D. P. HQ-SM/Bryson, R. P. 32-Geological Sci
HQ-SM/Allenby, R. J.
(10-810 195-42-68) (10-810 383-09-01)

NGL 39-009-023 Pennsylvania State University 3122
Research and development of on-board control systems and elements for aerospace vehicles
Period *Obligations*
10/22/64-09/30/74 FY75: TOTAL: \$403,296
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Shearer, J. L. HQ-RE/Janow, C. 49-Engr, NEC
(10-750 125-00-00)

NGL 39-009-032 Pennsylvania State University 3123
Study and evaluation of the constant-momentum mass spectrometer for ion analysis in the D and E regions of the ionosphere
Period *Obligations*
05/28/65-11/30/77 FY75: \$45,000 TOTAL: \$642,932
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kendall, B. R. HQ-SG/Berko, F. W. 13-Physics
HQ-SG/Ott, E. J.
(10-850 879-11-00) (10-850 879-00-00)

NGL 39-009-121 Pennsylvania State University 3124
Research in aircraft propulsion noise and its reduction
Period *Obligations*
12/20/68-06/30/75 FY75: TOTAL: \$335,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Reethof, G. LARC/Seiner, J. M. 41-Aero Engr
(23-704 501-04-01) (23-704 501-24-01)

NGL 39-009-172 Pennsylvania State University 3125
Investigation of characteristics of a propeller operating at static conditions
Period *Obligations*
04/17/70-03/31/77 FY75: TOTAL: \$165,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Eisenhuth, J. J. LARC/Heyson, H. H. 41-Aero Engr
(23-760 721-00-00)

NGR 39-009-034 Pennsylvania State University 3126
A study of low-cycle fatigue under multiaxial in-phase and out-of-phase strain cycling
Period *Obligations*
06/26/68-09/01/75 FY75: \$19,958 TOTAL: \$142,654
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Zamrik, S. Y. LERC/Hirschberg, M. H. 47-Materials Engr
(22-702 505-01-21) (22-704 501-21-21)

NGR 39-009-077 Pennsylvania State University 3127
Investigation of near critical and supercritical burning of fuel droplets
Period *Obligations*
08/17/66-01/01/77 FY75: \$25,745 TOTAL: \$284,155
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Faeth, G. M. LERC/Priem, R. J. 42-Astro Engr
(22-704 506-21-53) (22-704 502-28-04) (22-710 128-00-00)

NGR 39-009-180 Pennsylvania State University 3128
Detection of microorganisms in their natural habitat
Period *Obligations*
06/12/70-08/31/75 FY75: \$35,180 TOTAL: \$164,141
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Casida, L. E., Jr. HQ-SL/Young, R. S. 51-Biology
(10-840 192-55-63)

NGR 39-009-204 Pennsylvania State University 3129
Effects of hypnotic drugs
Period *Obligations*
05/22/71-03/01/75 FY75: TOTAL: \$125,300
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kales, A. JSC/Homick, J. L. 59-Life Sci, NEC
Bixler, E. O.
Kales, J. D.
(72-970 970-51-11) (72-970 970-51-00) (72-970 970-00-00)

NGR 39-009-218 Pennsylvania State University 3130
Study of mesospheric ionization in winter
Period *Obligations*
10/11/71-09/30/75 FY75: \$40,000 TOTAL: \$159,740
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hale, L. C. HQ-SG/Berko, F. W. 13-Physics
HQ-SG/Ott, E. J.
(10-850 879-11-00)

**NASA'S UNIVERSITY PROGRAM
PENNSYLVANIA (Continued)**

NGR 39-009-270 **Pennsylvania State University** **3131**
 Study in jet noise
Period *Obligations*
 06/25/73-06/29/76 **FY75:** **TOTAL: \$45,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Arndt, R. E. LERC/Stone, J. R. 41-Aero Engr
 (22-704 501-15-83)

NGR 39-009-275 **Pennsylvania State University** **3132**
 Investigation of unsteady pressure distribution on blades of an axial flow fan
Period *Obligations*
 09/01/73-08/31/76 **FY75:** **TOTAL: \$45,082**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Henderson, R. E. LERC/Dittmar, J. H. 46-Mech Engr
 LERC/Feiler, C. E.
 (22-704 501-15-83)

NGT 39-009-141 **Pennsylvania State University** **3133**
 Training of graduate students in acoustics related to aeronautical & space technology
Period *Obligations*
 05/31/69-08/31/74 **FY75:** **TOTAL: \$133,200**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Reethof, G. HQ-P/Carter, C. H. 99-Multi-Discip
 (10-370 181-00-00)

NSG 1126 **Pennsylvania State University** **3134**
 Propagation and attenuation of complex acoustic waves in treated circular and annular ducts
Period *Obligations*
 12/05/74-12/04/75 **FY75: \$25,000** **TOTAL: \$25,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Reethof, G. LARC/Posey, J. W. 46-Mech Engr
 LARC/Chestnutt, D.
 (23-702 505-03-12)

NSG 1141 **Pennsylvania State University** **3135**
 Polyphosphazenes as ultraviolet resistant polymers
Period *Obligations*
 02/01/75-01/31/76 **FY75: \$24,012** **TOTAL: \$24,012**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Allcock, H. R. LARC/Slemp, W. S. 12-Chemistry
 LARC/Johnston, N. J.
 (23-704 506-16-32)

NSG 3012 **Pennsylvania State University** **3136**
 Compressor or fan rotor wake characteristics
Period *Obligations*
 06/28/74-06/26/76 **FY75: \$55,672** **TOTAL: \$107,677**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Lakshminarayana, B. LERC/Heidmann, M. F. 41-Aero Engr
 LERC/Feiler, C. E.
 (22-702 505-03-11)

NSG 3016 **Pennsylvania State University** **3137**
 Microstructural parameters and the impact resistance of ceramic turbine materials
Period *Obligations*
 07/01/74-06/30/76 **FY75: \$35,000** **TOTAL: \$70,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Bradt, R. C. LERC/Sanders, W.A. 47-Materials Engr
 LERC/Probst, H. B.
 (22-702 505-01-11)

NSG 3031 **Pennsylvania State University** **3138**
 The unsteady response of an axial flow fan to inlet distortions
Period *Obligations*
 09/01/74-08/31/77 **FY75: \$56,641** **TOTAL: \$56,641**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Henderson, R. E. LERC/Sanger, N. L. 41-Aero Engr
 (22-704 501-15-83)

NSG 3032 **Pennsylvania State University** **3139**
 Blade end wall flows in compressors
Period *Obligations*
 09/01/74-08/31/77 **FY75: \$50,801** **TOTAL: \$50,801**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Lakshminarayana, B. LERC/Sockol, P. M. 41-Aero Engr
 (22-704 501-15-83)

NSG 7078 **Pennsylvania State University** **3140**
 Technical problems related to orbital capture of passive objects
Period *Obligations*
 07/01/74-06/30/76 **FY75: \$70,807** **TOTAL: \$70,807**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Kaplan, M. HQ-MT/Cramblitt, D. 42-Astro Engr
 (62-980 981-60-10) (10-980 981-60-10)

NSG 7120 **Pennsylvania State University** **3141**
 Physicochemical basis for evaluating lunar petrogenesis
Period *Obligations*
 02/01/75-01/31/76 **FY75: \$19,986** **TOTAL: \$19,986**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Muan, A. HQ-SM/Stuart-Alexander, D. E. 32-Geological Sci
 HQ-SM/Roberson, F. I.
 (10-810 195-20-03)

NAS 2-7730 **University of Pennsylvania** **3142**
 Biosatellite II experiments P-1017 & 1096
Period *Obligations*
 07/24/73-08/01/75 **FY75:** **TOTAL: \$6,039**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Brown, A. H. ARC/Zill, L. P. 51-Biology
 Dahl, A. O.
 (21-970 970-00-00)

NAS 5-20707 **University of Pennsylvania** **3143**
 Study for validation & specifications for a space shuttle RFI experiment
Period *Obligations*
 09/03/74-10/03/75 **FY75: \$59,798** **TOTAL: \$59,798**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Showers, R. M. GSFC/Taylor, R. E. 41-Aero Engr
 Haber, F.
 (51-601 645-25-07)

NGL 39-010-001 **University of Pennsylvania** **3144**
 Conversion of various forms of energy by unconventional techniques
Period *Obligations*
 05/29/69-09/30/74 **FY75:** **TOTAL: \$1,711,112**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Unavailable HQ-RP/Cohn, E. M. 13-Physics
 (10-370 183-00-00) (10-710 123-00-00)

**NASA'S UNIVERSITY PROGRAM
TENNESSEE (Continued)**

NAS 8-31189 **Memphis State University** **3199**
Optimization of absorption. Air conditioning systems for solar energy applications
Period *Obligations*
09/01/74-10/30/75 **FY75: \$25,944 TOTAL: \$25,944**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Perry, E. MSFC/Patterson, W. C. 46-Mech Engr
MSFC/Clark, D. C.
(62-400 647-40-01)

NAS 9-13878 **Memphis State University** **3200**
Digital voice processor
Period *Obligations*
06/01/74-08/31/75 **FY75: TOTAL: \$64,700**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Morris, C. F. JSC/Shack, P. E. 45-Elec Engr
(72-920 986-15-00)

NGR 43-008-008 **Memphis State University** **3201**
Annoyance factors in aircraft sound
Period *Obligations*
09/10/73-08/10/75 **FY75: \$28,131 TOTAL: \$55,072**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Fletcher, J. L. LARC/Shepherd, W. T. 69-Psych, NEC
(23-704 504-09-11) (23-704 501-09-02)

NGR 43-014-002 **Tennessee State University** **3202**
Research program in sorption dynamics
Period *Obligations*
10/01/73-10/01/74 **FY75: TOTAL: \$25,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Busby, M. R. LERC/Cassidy, J. F. 13-Physics
(22-371 340-00-00)

NGR 43-014-003 **Tennessee State University** **3203**
Effect of friction variables on the strain hardening of nickel, iron and zinc during sliding contact
Period *Obligations*
12/17/73-06/16/75 **FY75: TOTAL: \$33,501**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sutherland, C. W. LERC/Buckley, D. H. 47-Materials Engr
Wert, J. J.
(22-371 340-00-00)

NGT 43-014-750 **Tennessee State University** **3204**
Training of predoctoral graduate students in space-related sciences and engineering
Period *Obligations*
06/01/75-05/31/76 **FY75: \$14,000 TOTAL: \$14,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Clark, Y. Y. HQ-P/Pohly, J. G. 49-Engr, NEC
(10-030 010-00-00)

NSG 8012 **Tennessee State University** **3205**
Applications of acoustic emission to space flight hardware
Period *Obligations*
06/03/74-06/03/76 **FY75: \$59,963 TOTAL: \$91,957**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Packman, P. F. MSFC/Harman, H. S. 46-Mech Engr
MSFC/Kent, M. I.
(62-371 340-00-00)

NAS 8-31564 **Tennessee Technological University** **3206**
Study of utilization of solar energy for residential heating and cooling application
Period *Obligations*
07/01/75-03/31/76 **FY75: \$10,000 TOTAL: \$10,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Griggs, E. I. MSFC/Humphries, W. R. 31-Atmos Sci
(62-400 647-40-01)

NCA 8-102 **Tennessee Technological University** **3207**
Study of the heat transfer characteristics of a PCM thermal capacitor
Period *Obligations*
11/08/74-10/07/75 **FY75: \$23,000 TOTAL: \$23,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Griggs, E. I. MSFC/Humphries, W. R. 45-Elec Engr
(62-980 909-54-02)

NGR 43-003-012 **Tennessee Technological University** **3208**
Investigation of difficulties associated with the use of lead telluride & other II-VI compounds for thin film thermistors
Period *Obligations*
02/02/70-05/31/75 **FY75: TOTAL: \$230,012**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
McLennan, W. D. LARC/Hardesty, C. A. 13-Physics
(23-680 607-06-00) (23-680 607-00-00)

NGR 43-003-015 **Tennessee Technological University** **3209**
Investigation of open-loop amplification of Reynolds number dependent processes
Period *Obligations*
09/16/71-12/31/75 **FY75: \$20,000 TOTAL: \$82,750**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Purdy, K. R. LERC/Priem, R. J. 46-Mech Engr
(22-704 506-21-53) (22-704 502-04-25)

NAS 5-20672 **University of Tennessee - Knoxville** **3210**
Molecular absorption parameters study
Period *Obligations*
07/29/74-07/29/77 **FY75: \$13,000 TOTAL: \$13,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Fox, K. GSFC/Kunde, V. G. 31-Atmos Sci
GSFC/Hanel, R. A.
(51-840 384-47-51)

NAS 8-27296 **University of Tennessee - Knoxville** **3211**
Vibration effects on strapdown navigation accuracy
Period *Obligations*
04/16/71-08/31/75 **FY75: \$62,676 TOTAL: \$216,984**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kennedy, E. J. MSFC/Berry, E. H. 42-Astro Engr
MSFC/Gains, B. J.
(62-630 179-42-20) (62-830 180-17-53) (62-850 188-78-57)

NAS 8-29271 **University of Tennessee - Knoxville** **3212**
Application of image enhancement techniques to remote manipulator operations
Period *Obligations*
01/08/73-10/01/75 **FY75: \$47,583 TOTAL: \$74,903**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gonzalez, R. C. MSFC/Borelli, M. T. 45-Elec Engr
MSFC/Huggins, C. T.
(62-970 970-63-20)

**NASA'S UNIVERSITY PROGRAM
TENNESSEE (Continued)**

NAS 8-29584 University of Tennessee - Knoxville **3213**
Study of wind profiles over nonuniform surface relative to ground design of aircraft & space vehicles

<i>Period</i>	<i>Obligations</i>	
02/02/73-07/01/76	FY75: \$82,410	TOTAL: \$226,795
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Frost, W.	MSFC/Fichtl, G. H.	46-Mech Engr
	MSFC/Alexander, M.	

(62-702 505-08-10)

NAS 8-30256 University of Tennessee - Knoxville **3214**
Optimization of propellant usage for space tug vehicle

<i>Period</i>	<i>Obligations</i>	
08/15/73-03/01/75	FY75: \$5,996	TOTAL: \$55,738
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Liu, T. C.	MSFC/Fisher, P. H., Jr.	45-Elec Engr
	MSFC/Blanton, J. E.	

(62-980 909-55-05)

NAS 8-30878 University of Tennessee - Knoxville **3215**
Adaptive statistical pattern classifiers for remotely sensed data

<i>Period</i>	<i>Obligations</i>	
06/26/74-06/26/75	FY75:	TOTAL: \$22,961
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gonzalez, R. C.	MSFC/Cummings, R. E.	39-Env Sci, NEC

(62-680 177-52-73)

NAS 8-30879 University of Tennessee - Knoxville **3216**
Study of current and proposed input preparation methods and hardware for third generation computers

<i>Period</i>	<i>Obligations</i>	
06/28/74-06/30/75	FY75:	TOTAL: \$19,982
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sherman, G. R.	MSFC/Fortenberry, W. H.	21-Mathematics
	MSFC/Kearney, J. D.	

(62-950 951-00-00)

NAS 8-31143 University of Tennessee - Knoxville **3217**
Use of ERTS data to update and map the wetlands of Western Tennessee

<i>Period</i>	<i>Obligations</i>	
10/21/74-10/21/75	FY75: \$10,000	TOTAL: \$10,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rehder, J. B.	MSFC/Escue, W. T.	39-Env Sci, NEC
	MSFC/Downs, S. W.	

(62-680 177-54-72)

NAS 8-31197 University of Tennessee - Knoxville **3218**
Study of the effect of vertical shear on thunderstorm development

<i>Period</i>	<i>Obligations</i>	
03/24/75-09/24/75	FY75: \$15,250	TOTAL: \$15,250
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Connell, J. R.	MSFC/Hill, C. K.	46-Mech Engr
	MSFC/Turner, R. E.	

(62-680 175-61-71)

NGL 43-001-006 University of Tennessee - Knoxville **3219**
Spectroscopic studies of life shape of atmospheric gases & of absorption bands of inorganic solids

<i>Period</i>	<i>Obligations</i>	
01/07/64-09/30/77	FY75: \$75,000	TOTAL: \$1,168,628
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Gailar, N. M.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

(10-840 185-47-83)

NGL 43-001-140 University of Tennessee - Knoxville **3220**
Experimental investigations of opaque minerals and cooling history of lunar rocks

<i>Period</i>	<i>Obligations</i>	
09/01/73-01/31/78	FY75: \$56,720	TOTAL: \$186,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Taylor, L. A.	JSC/Harris, J. W.	11-Astronomy
(72-810 388-10-02)	(72-910 914-40-00)	

NGR 43-001-127 University of Tennessee - Knoxville **3221**
Molecular seals for space flight application

<i>Period</i>	<i>Obligations</i>	
03/07/73-08/31/74	FY75:	TOTAL: \$7,845
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Milligan, M. W.	LERC/Hady, W. F.	42-Astro Engr
(22-704 502-31-51)		

NGR 43-001-134 University of Tennessee - Knoxville **3222**
Research on fan noise caused by fluctuating lift, inlet turbulence, and distortion

<i>Period</i>	<i>Obligations</i>	
06/27/73-08/31/76	FY75:	TOTAL: \$47,060
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lunsdaine, E.	LERC/Dittmar, J. H.	41-Aero Engr
	LERC/Saule, A. V.	

(22-704 501-15-83)

NGR 43-001-135 University of Tennessee - Knoxville **3223**
Research in aeroacoustics

<i>Period</i>	<i>Obligations</i>	
06/08/73-08/31/76	FY75:	TOTAL: \$48,840
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Maus, J. R.	LERC/Reshotko, M.	41-Aero Engr

(22-704 501-15-83)

NGR 43-001-144 University of Tennessee - Knoxville **3224**
Iterative solution of the problem of orbit estimation using Chebyshev series

<i>Period</i>	<i>Obligations</i>	
01/01/74-01/31/75	FY75:	TOTAL: \$24,028
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Feagin, T.	GSFC/Velez, C. E.	21-Mathematics

(51-500 311-80-63)

NSG 1054 University of Tennessee - Knoxville **3225**
Investigation of Kline-Fogelman airfoil section for rotor blade applications (aerodynamic characteristics, blade-stall and flutter)

<i>Period</i>	<i>Obligations</i>	
05/07/74-06/30/75	FY75:	TOTAL: \$31,510
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lumsdaine, E.	LARC/Hammond, C. E.	41-Aero Engr
Johnson, W. S.		

(23-704 502-32-02)

**NASA'S UNIVERSITY PROGRAM
TENNESSEE (Continued)**

NSG 1081	University of Tennessee - Knoxville	3226			
Investigation of inlet noise suppression using high subsonic mach numbers					
<i>Period</i>		<i>Obligations</i>			
07/15/74-08/31/75	FY75: \$25,180	TOTAL: \$25,180			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Lumsdaine, E.	LARC/Chestnutt, D.	41-Aero Engr			
	LARC/Clark, L. R.				
(23-702 505-03-12)					
NSG 1163	University of Tennessee - Knoxville	3227			
Comparison of the fracture toughness of metal-matrix composites as determined by four different techniques					
<i>Period</i>		<i>Obligations</i>			
05/01/75-04/30/76	FY75: \$47,255	TOTAL: \$47,255			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Wright, M. A.	LARC/Newman, J. C., Jr.	47-Materials Engr			
	LARC/Poe, C. C., Jr.				
(23-702 505-02-31)					
NSG 1171	University of Tennessee - Knoxville	3228			
Study of tandem blades for helicopter rotors					
<i>Period</i>		<i>Obligations</i>			
06/01/75-05/31/76	FY75: \$33,040	TOTAL: \$33,040			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Lumsdaine, E.	LARC/Hammond, C. E.	41-Aero Engr			
(23-702 505-10-26)					
NSG 5002	University of Tennessee - Knoxville	3229			
Research of the architecture and data processing alternatives for the TSE computer					
<i>Period</i>		<i>Obligations</i>			
05/01/74-08/31/75	FY75: \$55,884	TOTAL: \$55,884			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Bodenheimer, R. E.	GSFC/Schaefer, D. H.	21-Mathematics			
(51-704 502-23-32)					
NSG 5040	University of Tennessee - Knoxville	3230			
The on-board determination of the orbit of a satellite using Chebyshev series					
<i>Period</i>		<i>Obligations</i>			
02/01/75-01/31/76	FY75: \$18,000	TOTAL: \$18,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Feagin, T.	GSFC/Velez, C. E.	49-Engr, NEC			
Berger, P. E.	GSFC/Fuchs, A. J.				
Lowder, H. E., Jr.					
(51-500 310-10-22)					
NSG 7049	University of Tennessee - Knoxville	3231			
Line identification and lifetime measurements in the XUV and soft X-ray regions					
<i>Period</i>		<i>Obligations</i>			
05/01/74-04/30/76	FY75: \$37,251	TOTAL: \$37,251			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Sellin, I. A.	HQ-SG/Weldon, J. M.	11-Astronomy			
	HQ-SG/Jordan, S. D.				
(10-850 188-38-53)					
NAS 5-22495	University of Tennessee - Memphis	3232			
Programmable data collection platform study					
<i>Period</i>		<i>Obligations</i>			
06/26/75-03/25/76	FY75: \$45,000	TOTAL: \$45,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Rochelle, R. W.	GSFC/Allen, W. K.	31-Atmos Sci			
(51-601 644-04-03)					
NAS 9-13617	University of Tennessee - Memphis	3233			
Toxicity of pyrolysis products of spacecraft materials					
<i>Period</i>		<i>Obligations</i>			
08/01/73-11/30/75	FY75: \$49,930	TOTAL: \$119,900			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Autian, J.	JSC/Kaplan, H.	53-Other Medical			
(72-970 970-51-25)					
NAS 8-29460	Vanderbilt University	3234			
Study of the relationship between thermal expansion of microcircuit components and reliability					
<i>Period</i>		<i>Obligations</i>			
05/21/73-07/30/74	FY75: \$11,058	TOTAL: \$11,058			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Kinser, D. L.	MSFC/Allen, R. V.	47-Materials Engr			
	MSFC/Caruso, S. V.				
(62-704 502-23-51) (62-704 502-00-00)					
NAS 8-30656	Vanderbilt University	3235			
Study of diffusion coefficients of glasses under zero-g					
<i>Period</i>		<i>Obligations</i>			
06/01/74-11/30/75	FY75: \$33,622	TOTAL: \$44,647			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Kinser, D. L.	MSFC/Nichols, R. L.	13-Physics			
	MSFC/King, M. S.				
(62-630 179-14-20)					
NAS 8-30883	Vanderbilt University	3236			
Discrete component bonding and thick-film materials study					
<i>Period</i>		<i>Obligations</i>			
06/26/74-08/31/75	FY75: \$14,954	TOTAL: \$14,954			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Kinser, D. L.	MSFC/Caruso, S. V.	47-Materials Engr			
	MSFC/Filip, G. L.				
(62-750 115-00-00)					
NAS 8-31556	Vanderbilt University	3237			
Study of standard test specimen for rod peening aluminum alloys					
<i>Period</i>		<i>Obligations</i>			
06/25/75-09/24/75	FY75: \$20,000	TOTAL: \$20,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Wert, J. J.	MSFC/Brennecke, M. W.	47-Materials Engr			
Ranganathan, B. N.	MSFC/Hess, H. A.				
(62-930 966-40-00)					
NGR 43-002-031	Vanderbilt University	3238			
Investigation of high energy radiation from a plasma focus					
<i>Period</i>		<i>Obligations</i>			
01/23/69-08/31/75	FY75: \$54,968	TOTAL: \$339,088			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Lee, J. H.	LARC/Hohl, F.	13-Physics			
	LARC/Wood, G. P.				
(23-704 506-25-31) (23-704 502-10-01) (23-740 129-00-00)					

**NASA'S UNIVERSITY PROGRAM
TEXAS**

TEXAS

NAS 9-10537 **Baylor University - Medical College** **3239**
Study of human adrenal control mechanisms
Period *Obligations*
04/23/70-07/31/75 **FY75:** **TOTAL: \$144,590**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Campbell, B. O. JSC/Leach, C. S. 52-Clinical Med
(72-970 970-51-16)

NAS 9-11201 **Baylor University - Medical College** **3240**
Radioisotopic study
Period *Obligations*
06/30/70-07/31/76 **FY75:** **TOTAL: \$85,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Johnson, P. C. JSC/Leach, C. S. 59-Life Sci, NEC
(72-960 948-60-90) (72-960 948-60-00) (72-910 914-50-00)

NAS 9-12728 **Baylor University - Medical College** **3241**
Skylab gastrointestinal analysis
Period *Obligations*
05/22/72-06/30/75 **FY75:** **TOTAL: \$118,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Nichols, B. L. JSC/Smith, M. C., Jr. 53-Other Medical
(72-970 970-51-14)

NAS 9-13452 **Baylor University - Medical College** **3242**
Neurophysiological research relating performance to stress
Period *Obligations*
05/24/73-11/30/75 **FY75:** **TOTAL: \$105,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Roessler, R. JSC/Shumate, W. H. 53-Other Medical
(72-970 970-51-11) (72-970 970-00-00)

NAS 9-13540 **Baylor University - Medical College** **3243**
Critical analysis of amino acid excretion patterns
Period *Obligations*
06/28/73-08/31/76 **FY75: \$24,600** **TOTAL: \$59,600**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Di Ferrante, N. JSC/Leach, C. S. 59-Life Sci, NEC
(72-970 970-51-16)

NAS 9-13737 **Baylor University - Medical College** **3244**
Analysis of body calcium
Period *Obligations*
02/01/74-08/02/76 **FY75: \$70,000** **TOTAL: \$165,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Johnson, P. C. JSC/Smith, M. C., Jr. 53-Other Medical
Scheld, W. JSC/Hoffman, R. A.

NAS 9-14322 **Baylor University - Medical College** **3245**
Cellular immune response study
Period *Obligations*
08/01/74-07/31/76 **FY75: \$100,000** **TOTAL: \$100,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Criswell, B. S. JSC/Kimzey, S. L. 52-Clinical Med
(72-970 970-51-15)

NAS 9-14368 **Baylor University - Medical College** **3246**
Study of lymphocyte heterogeneity morphological and functional correlations
Period *Obligations*
11/01/74-10/31/76 **FY75: \$28,000** **TOTAL: \$28,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Rich, R. R. JSC/Kimzey, S. L. 53-Other Medical
Talletta, J. M.
(72-970 970-51-15)

NAS 9-14406 **Baylor University - Medical College** **3247**
ASTP experiment 03
Period *Obligations*
03/10/75-03/01/76 **FY75: \$29,051** **TOTAL: \$29,051**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Martin, R. R. JSC/Kimzey, S. L. 53-Other Medical
(72-930 966-30-00)

NAS 9-14407 **Baylor University - Medical College** **3248**
Evaluate primary irritancy and allergenicity of materials proposed for crew apparel
Period *Obligations*
09/19/74-09/18/75 **FY75: \$9,978** **TOTAL: \$9,978**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Duncan, W. C. JSC/Kaplan, H. L. 52-Clinical Med
(72-970 970-51-25)

NAS 9-14468 **Baylor University - Medical College** **3249**
ASTP experiment 03
Period *Obligations*
03/10/75-03/01/76 **FY75: \$53,622** **TOTAL: \$53,622**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Criswell, B. S. JSC/Kimzey, S. L. 53-Other Medical
(72-930 966-30-00)

NAS 9-14546 **Baylor University - Medical College** **3250**
Etiological study of motion sickness by using subhuman primates
Period *Obligations*
05/01/75-04/30/76 **FY75: \$30,000** **TOTAL: \$30,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Igarashi, M. JSC/Homick, J. L. 51-Biology
(72-970 970-51-11)

NAS 9-14603 **Baylor University - Medical College** **3251**
Biomedical study concerning aberrations of immunological functions associated with space flight
Period *Obligations*
06/01/75-06/30/76 **FY75: \$29,600** **TOTAL: \$29,600**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gentry, L. O. JSC/Kimzey, S. L. 53-Other Medical
(72-960 948-60-91)

NAS 9-14661 **Baylor University - Medical College** **3252**
Evaluation of physiological responses and diagnostic criteria for the application of exercise stress testing within the biomedical space program
Period *Obligations*
06/01/75-05/31/77 **FY75: \$80,000** **TOTAL: \$80,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cardus, D. JSC/Rummel, J. A. 53-Other Medical
JSC/Sawin, C. F.
(72-970 970-51-14)

NASA'S UNIVERSITY PROGRAM

TEXAS (Continued)

NAS 9-14662 **Baylor University - Medical College** **3253**
 Influence of the external parameters of space flight on the regulation of blood volume

<i>Period</i>	<i>Obligations</i>	
06/01/75-06/30/76	FY75: \$59,975	TOTAL: \$59,975
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Johnson, P. C.	JSC/Kimzey, S. L.	52-Clinical Med

(72-970 970-51-15)

NAS 9-14715 **Baylor University - Medical College** **3254**
 Renal response to actual and simulated space flight

<i>Period</i>	<i>Obligations</i>	
06/16/75-06/16/76	FY75: \$40,000	TOTAL: \$40,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Suki, W. N.	JSC/Leach, C. S.	59-Life Sci, NEC

(72-970 970-51-16)

NGR 44-003-053 **Baylor University - Medical College** **3255**
 Ion distribution in muscle and electron probe microanalysis

<i>Period</i>	<i>Obligations</i>	
03/07/72-08/31/75	FY75:	TOTAL: \$75,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Nichols, B. L.	JSC/Kimzey, S. L.	52-Clinical Med
Hazlewood, C. F.		

(72-970 970-51-15)

NGR 44-003-057 **Baylor University - Medical College** **3256**
 New vision techniques for use in space

<i>Period</i>	<i>Obligations</i>	
01/19/72-01/01/76	FY75: \$40,000	TOTAL: \$236,730
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Decker, T. A.	ARC/Haines, R. F.	51-Biology
Williams, R. E.	ARC/Huff, E. M.	

(21-970 970-21-11) (21-970 970-24-04)

NGR 44-032-013 **Bishop College** **3257**
 Relationship of tissue growth stimulant to stress reactions in space

<i>Period</i>	<i>Obligations</i>	
09/01/73-08/31/76	FY75:	TOTAL: \$68,761
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kutsky, R. J.	ARC/Danellis, J. V.	51-Biology
	ARC/Holton, E. M.	

(10-371 340-00-00)

NGR 44-095-001 **Hardin - Simmons University** **3258**
 Study of psychophilic organisms isolated from manufacture and assembly areas of spacecraft to be used in the Viking missions

<i>Period</i>	<i>Obligations</i>	
08/21/72-12/31/75	FY75: \$65,000	TOTAL: \$148,600
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Foster, T. L.	HQ-SL/Hall, L. B.	51-Biology
	HQ-SL/Gallagher, S. G.	

(10-840 193-58-62)

NGR 44-081-001 **Houston Baptist University** **3259**
 Research in stellar ultraviolet spectroscopy

<i>Period</i>	<i>Obligations</i>	
05/20/70-06/30/76	FY75: \$34,000	TOTAL: \$151,335
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Modisette, J. L.	JSC/Kondo, Y.	11-Astronomy

(72-850 188-41-55) (72-910 914-00-00) (72-850 188-41-51)

NGR 44-081-005 **Houston Baptist University** **3260**
 Analysis of Copernicus OAO data on the MG 11 resonance doublet at 2802 and 2795A, in early type stars

<i>Period</i>	<i>Obligations</i>	
01/21/74-12/31/75	FY75: \$5,600	TOTAL: \$7,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Modisette, J. L.	JSC/Kondo, Y.	11-Astronomy

(72-850 831-42-00)

NSG 9007 **Houston Baptist University** **3261**
 Feasibility study for measurement of trace atmospheric constituents by high resolution infrared spectroscopy

<i>Period</i>	<i>Obligations</i>	
09/01/74-12/31/75	FY75:	TOTAL: \$15,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Modisette, J. L.	JSC/Potter, A. E.	13-Physics

(72-920 989-10-00)

NGR 44-087-001 **Pan American University** **3262**
 Experimental test of plant canopy reflectance models on cotton

<i>Period</i>	<i>Obligations</i>	
09/01/73-08/31/74	FY75:	TOTAL: \$27,393
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Le Master, E. W.	HQ-P/Pohly, J. G.	39-Env Sci, NEC
	JSC/Potter, A. E.	

(10-371 340-00-00)

NGR 44-087-002 **Pan American University** **3263**
 Diffuse reflectance spectra of frosts occurring on astronomical objects

<i>Period</i>	<i>Obligations</i>	
01/01/74-12/31/75	FY75: \$30,303	TOTAL: \$55,221
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Glaser, F. M.	JPL/Huntress, W. T.	32-Geological Sci

(56-371 340-00-00)

NSG 9015 **Pan American University** **3264**
 Further tests of plant canopy reflectance models and investigation of non-Labmertian properties of plant canopies

<i>Period</i>	<i>Obligations</i>	
09/01/74-08/31/75	FY75: \$25,160	TOTAL: \$25,160
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lemaster, E. W.	JSC/Potter, A. E.	39-Env Sci, NEC

(72-371 340-00-00)

NGR 44-033-014 **Prairie View A&M University** **3265**
 Hydrothermal crystal growths

<i>Period</i>	<i>Obligations</i>	
05/01/72-08/31/74	FY75:	TOTAL: \$41,053
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stubblefield, C. T.	HQ-P/Pohly, J. G.	43-Chem Engr

(10-371 340-00-00)

NGT 44-033-750 **Prairie View A&M University** **3266**
 Training of undergraduate students in the space-related sciences and engineering

<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$14,000	TOTAL: \$14,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Greaux, A. E.	HQ-P/Pohly, J. G.	49-Engr, NEC

(10-030 010-00-00)

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TEXAS (Continued)**

NSG 9006	Prairie View A&M University	3267			
Measurement of growth morphological and bi-directional scattering parameters of wheat					
<i>Period</i>		<i>Obligations</i>			
06/01/74-08/31/75	FY75:	TOTAL: \$33,019			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Sohel, M. S.	JSC/Potter, A. E.	39-Env Sci, NEC			
Brams, E.					
(72-371 340-00-00)					
NSG 9018	Prairie View A&M University	3268			
Interaction of the lanthanons with anorthite under hydrothermal conditions					
<i>Period</i>		<i>Obligations</i>			
09/01/74-08/31/75	FY75: \$20,000	TOTAL: \$20,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Stubblefield, C. T.	JSC/Williams, R. J.	12-Chemistry			
(72-371 340-00-00)					
NAS 2-8676	Rice University	3269			
Research study on metabolism and energetics in hypogravity					
<i>Period</i>		<i>Obligations</i>			
12/23/74-09/30/75	FY75: \$29,999	TOTAL: \$29,999			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Ward, C. H.	ARC/Taketa, S. T.	53-Other Medical			
(21-970 970-21-61)					
NAS 5-9317	Rice University	3270			
Reduction and analysis of data from OGO-C&D ion chamber experiment					
<i>Period</i>		<i>Obligations</i>			
03/23/66-12/01/78	FY75:	TOTAL: \$201,552			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Anderson, H. R.	GSFC/Meese, K. J.	32-Geological Sci			
(51-850 841-00-00)					
NAS 5-23338	Rice University	3271			
Theoretical predictions and data analysis					
<i>Period</i>		<i>Obligations</i>			
02/04/74-07/01/75	FY75:	TOTAL: \$4,200			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Cloutier, P. A.	GSFC/Taylor, H. A., Jr.	13-Physics			
Michel, F. C.					
(51-840 186-68-63)					
NAS 6-1667	Rice University	3272			
Investigation into relationship between field aligned currents and auroral particle fluxes					
<i>Period</i>		<i>Obligations</i>			
07/23/69-06/30/75	FY75: \$205,000	TOTAL: \$1,514,809			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Freeman, J. W.	WFC/Gray, J. W.	11-Astronomy			
Anderson, H. R.	WFC/West, W. W.				
(53-850 879-10-00)					
NAS 9-5911	Rice University	3273			
Suprathermal ion detector experiment for ALSEP					
<i>Period</i>		<i>Obligations</i>			
04/28/66-07/31/75	FY75:	TOTAL: \$5,206,953			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Freeman, J. W.	JSC/Eichelman, W. F.	13-Physics			
(72-810 383-25-03)	(72-910 914-40-00)				
NAS 9-10428	Rice University	3274			
Apollo infrared scanning radiometer					
<i>Period</i>		<i>Obligations</i>			
02/26/70-12/31/74	FY75:	TOTAL: \$302,691			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Low, F. J.	JSC/Eichelman, W. F.	39-Env Sci, NEC			
(72-910 914-49-00)					
NAS 9-11827	Rice University	3275			
Adsorption bed models used in simulation of atmospheric control systems					
<i>Period</i>		<i>Obligations</i>			
05/10/71-06/30/76	FY75: \$24,093	TOTAL: \$74,860			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Davis, S. H.	JSC/Kissinger, L. D.	43-Chem Engr			
(72-970 970-52-21)					
NAS 9-12776	Rice University	3276			
Applied mathematics in classification analysis					
<i>Period</i>		<i>Obligations</i>			
05/26/72-05/31/76	FY75: \$61,500	TOTAL: \$289,920			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Lynn, M. S.	JSC/Baker, K.	21-Mathematics			
(72-680 177-42-81)	JSC/Potter, A. E.				
	(72-680 658-10-20)				
NAS 9-12912	Rice University	3277			
Germ free plant study					
<i>Period</i>		<i>Obligations</i>			
06/19/72-05/31/76	FY75:	TOTAL: \$20,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Ward, C. H.	JSC/Zieglschmid, J. F.	51-Biology			
(72-910 914-00-00)					
NASW 2776	Rice University	3278			
An investigation of the needs and the design of an orbiting space station with growth capabilities					
<i>Period</i>		<i>Obligations</i>			
02/19/75-12/19/76	FY75: \$35,920	TOTAL: \$35,920			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Trotti, G.	HQ-MT/Hartman, O. B.	49-Engr, NEC			
Dossey, J. R.					
(72-980 981-60-10)					
NGL 44-006-001	Rice University	3279			
Research on physics of solid materials including study of basic laws governing behavior of solids at high temperatures					
<i>Period</i>		<i>Obligations</i>			
05/01/72-06/30/78	FY75: \$200,000	TOTAL: \$4,550,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Rorschach, H. E.	LERC/Lad, R. A.	13-Physics			
(22-704 506-16-14)	(22-704 502-01-04)	(22-740 129-00-00)			
NGL 44-006-012	Rice University	3280			
Laboratory development of solar wind heavy-ion mass spectrometer					
<i>Period</i>		<i>Obligations</i>			
06/27/64-06/30/77	FY75: \$60,000	TOTAL: \$1,202,736			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Michel, F. C.	HQ-SG/Berko, F. W.	13-Physics			
(10-850 188-36-55)	HQ-SG/Schmerling, E. R.				

**NASA'S UNIVERSITY PROGRAM
TEXAS (Continued)**

NGL 44-006-127 **Rice University** **3281**
Lunar fines, their origin, evolution, and interaction with solar
wind and cosmic rays
Period *Obligations*
02/16/71-01/31/77 **FY75: \$47,629** **TOTAL: \$398,549**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Heymann, D. JSC/Harris, J. W. 32-Geological Sci
(72-810 388-10-02)

NGR 44-006-137 **Rice University** **3282**
Analysis of data on the magnetotail and solar wind
Period *Obligations*
12/29/70-12/31/75 **FY75: \$37,613** **TOTAL: \$157,697**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Dessler, A. J. HQ-SG/Berko, F. W. 13-Physics
HQ-SG/Schmerling, E. R.
(10-850 385-36-00)

NGR 44-006-142 **Rice University** **3283**
Lunar sample analysis
Period *Obligations*
05/26/71-01/31/76 **FY75: \$18,000** **TOTAL: \$136,068**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Powell, B. N. JSC/Harris, J. W. 32-Geological Sci
(72-810 388-10-01)

NGR 44-006-156 **Rice University** **3284**
Photoionization of atoms in metastable states
Period *Obligations*
06/21/72-06/30/76 **FY75: \$61,300** **TOTAL: \$168,049**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Stebbing, R. F. JSC/Hudson, R. D. 13-Physics
(72-840 185-47-32) (72-910 914-00-00)

NSG 1017 **Rice University** **3285**
Molecular beam experiments for space shuttle
Period *Obligations*
03/18/74-06/17/75 **FY75:** **TOTAL: \$22,706**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Stebbing, R. F. LARC/Outlaw, R. A. 13-Physics
(23-980 975-72-48)

NSG 7015 **Rice University** **3286**
Nuclear gamma-ray astronomy prospects for HEAO-B
Period *Obligations*
04/01/74-06/30/75 **FY75: \$5,000** **TOTAL: \$25,000**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Clayton, D. D. HQ-SG/Lazarus, A. J. 11-Astronomy
HQ-SG/Opp, A. G.
(10-850 188-46-57)

NSG 7025 **Rice University** **3287**
Investigation of lunar, terminator and nightside particle fluxes
and surface interactions
Period *Obligations*
03/01/74-02/28/76 **FY75: \$5,000** **TOTAL: \$58,926**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Lenzen, K. H. HQ-SM/Stuart-Alexander, D. E. 31-Atmos Sci
Siegel, W. HQ-SM/Roberson, F. I.
(10-810 383-20-03)

NSG 7032 **Rice University** **3288**
Apollo data synthesis: Lunar atmosphere and ionosphere
Period *Obligations*
04/01/74-05/31/76 **FY75:** **TOTAL: \$19,861**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Michel, F. C. HQ-SM/Hanley, J. B. 31-Atmos Sci
Manka, R. H. HQ-SM/Roberson, F. I.
(10-810 383-20-03)

NSG 7043 **Rice University** **3289**
Research on planetary atmospheres
Period *Obligations*
03/01/74-02/28/77 **FY75:** **TOTAL: \$81,071**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Chamberlain, J. W. HQ-SL/Fellows, R. F. 31-Atmos Sci
HQ-SL/Brunk, W. E.
(10-840 185-47-81)

NGL 44-007-042 **Southern Methodist University** **3290**
Boron arsenide and boron phosphide for high temperature and
luminescent devices
Period *Obligations*
04/10/69-08/31/75 **FY75:** **TOTAL: \$118,805**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Chu, T. L. LARC/Breckenridge, R. A. 47-Materials Engr
LARC/Robertson, J. B.
(25-750 125-00-00) (23-750 125-00-00)

NGR 44-007-049 **Southern Methodist University** **3291**
Digital communications for aircraft
Period *Obligations*
10/20/70-08/31/75 **FY75:** **TOTAL: \$88,893**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Gupta, S. C. LARC/Bracalente, E. M. 45-Elec Engr
(23-702 768-81-02)

NSG 1206 **Southern Methodist University** **3292**
Fabrication and evaluation of gallium arsenide solar cells with
solution-grown germanium doped P-region
Period *Obligations*
08/01/75-02/01/76 **FY75: \$10,500** **TOTAL: \$10,500**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Ashley, K. L. LARC/Walker, G. H. 45-Elec Engr
LARC/Conway, E. J.
(23-704 506-16-13)

NSG 2006 **Southern Methodist University** **3293**
Monitoring of the Dallas/Fort Worth regional airport
Period *Obligations*
02/01/74-02/15/76 **FY75: \$18,327** **TOTAL: \$31,227**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Brown, J. ARC/Tanner, T. A. 79-Soc Sci, NEC
Gerhardt, J. M. (21-704 504-09-12) (21-704 504-29-01) (21-704 504-29-02)

NGT 44-073-750 **Texas A&I University** **3294**
Training of predoctoral graduate students in space-related sciences
and engineering
Period *Obligations*
06/01/75-05/31/76 **FY75: \$7,000** **TOTAL: \$7,000**
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Franke, E. A. HQ-P/Pohly, J. G. 49-Engr, NEC
(10-030 010-00-00)

**NASA'S UNIVERSITY PROGRAM
TEXAS (Continued)**

NAS 3-17508	Texas A&M University System	3295	INAA multielement analysis of air filter samples
<i>Period</i>	<i>Obligations</i>		
07/23/73-09/15/75	FY75:	TOTAL: \$52,500	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Kuykendahl, W. (22-702 770-00-00)	LERC/King, R. B. (22-702 770-18-01)	39-Env Sci, NEC	
NAS 5-11988	Texas A&M University System	3296	Implementation of design phase of an automatic system for computer program documentation
<i>Period</i>	<i>Obligations</i>		
06/06/73-09/20/74	FY75:	TOTAL: \$160,537	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Simmons, D. B. (51-500 310-00-00)	GSFC/Damon, E. P.	21-Mathematics	
NAS 5-20715	Texas A&M University System	3297	Automatic documentation system to measure, improve and predict software reliability
<i>Period</i>	<i>Obligations</i>		
09/17/74-09/16/75	FY75: \$136,336	TOTAL: \$136,336	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Simmons, D. B. (51-500 310-40-25)	GSFC/Damon, E. P.	21-Mathematics	
NAS 5-20796	Texas A&M University System	3298	ERTS follow-on investigation
<i>Period</i>	<i>Obligations</i>		
01/15/75-11/15/76	FY75: \$97,000	TOTAL: \$97,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Rouse, J. (51-680 641-15-00)	GSFC/Stonesifer, G. R.	59-Life Sci, NEC	
NAS 5-20877	Texas A&M University System	3299	Scientific investigation in the gulf and Carribean in connection with Calypso experiment
<i>Period</i>	<i>Obligations</i>		
12/12/74-12/31/75	FY75: \$87,000	TOTAL: \$87,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Creasteau, J. (51-250 141-95-01)	GSFC/Houis, W. A. (51-680 177-44-42)	33-Oceanography	
NAS 5-21857	Texas A&M University System	3300	ERTS-A data user investigation of monitoring vernal advancement and retrogradation (Green wave effect) of national vegetation in great plains corridor
<i>Period</i>	<i>Obligations</i>		
09/27/72-03/19/75	FY75:	TOTAL: \$98,791	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Rouse, J. W., Jr. (51-680 641-14-01)	GSFC/Freden, S. C. (51-680 641-00-00)	39-Env Sci, NEC	
NAS 8-26379	Texas A&M University System	3301	Development of techniques to control dislocations created during the fabrication of large scale integrated circuit alloys
<i>Period</i>	<i>Obligations</i>		
08/27/70-12/31/75	FY75: \$84,045	TOTAL: \$220,310	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Porter, W. A. (62-704 502-23-52)	MSFC/Nowakowski, M.F. MSFC/Nichols, D. P. (62-950 953-00-00)	45-Elec Engr	
NAS 8-26751	Texas A&M University System	3302	Atmospheric variability and vertical motions
<i>Period</i>	<i>Obligations</i>		
01/15/71-12/31/75	FY75: \$98,971	TOTAL: \$181,372	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Scoggins, J. R. (62-680 175-91-41)	MSFC/Turner, R. E. MSFC/Hill, C. K. (62-680 175-61-71)	31-Atmos Sci	
NAS 8-29582	Texas A&M University System	3303	Feasibility of aircraft platforms to measure building wakes for aeronautical safety applications
<i>Period</i>	<i>Obligations</i>		
02/21/73-10/30/74	FY75:	TOTAL: \$19,988	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Brundidge, K. C. (62-704 501-00-00)	MSFC/Fichtl, G. H. MSFC/Camp, D. W.	31-Atmos Sci	
NAS 8-29764	Texas A&M University System	3304	Assessment of atmospheric relationships in support of space shuttle operations
<i>Period</i>	<i>Obligations</i>		
04/17/73-04/17/76	FY75:	TOTAL: \$34,991	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Scoggins, J. R. (62-920 989-13-00)	MSFC/Fichtl, G. H. MSFC/Camp, D. W. (62-920 986-25-00)	31-Atmos Sci	
NAS 8-29851	Texas A&M University System	3305	Gravitational effects on process-induced dislocations in silicon
<i>Period</i>	<i>Obligations</i>		
07/02/73-09/02/74	FY75:	TOTAL: \$35,798	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Porter, W. A. (62-980 975-90-95)	MSFC/Nowakowski, M. F. MSFC/Ruff, R. C.	13-Physics	
NAS 8-31332	Texas A&M University System	3306	Development of a moderately sized finite-element program for nonlinear structural analysis
<i>Period</i>	<i>Obligations</i>		
03/12/75-06/11/76	FY75: \$45,000	TOTAL: \$45,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Strickland, J. A. (62-980 909-55-01)	MSFC/Key, J. E. MSFC/Bianca, C. J., Jr.	21-Mathematics	
NAS 9-12434	Texas A&M University System	3307	Compression of rehydratable vegetables & cereals
<i>Period</i>	<i>Obligations</i>		
01/19/72-10/31/75	FY75: \$10,000	TOTAL: \$100,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Burns, E. E. (72-970 970-52-24)	JSC/Smith, M. C., Jr. (51-680 641-00-00)	59-Life Sci, NEC	
NAS 9-13647	Texas A&M University System	3308	Life sciences flight experiments
<i>Period</i>	<i>Obligations</i>		
07/10/73-12/31/75	FY75: \$30,000	TOTAL: \$59,312	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	
Kuchnow, K. P. (72-970 970-51-62)	JSC/Hoffman, R. A.	51-Biology	

NASA'S UNIVERSITY PROGRAM

TEXAS (Continued)

NAS 9-13894 Texas A&M University System 3309
 Classification techniques evaluation and yield modeling for a large crop inventory project

Period	Obligations	
01/15/74-03/01/76	FY75: \$158,524	TOTAL: \$221,724
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Guseman, L. D.	JSC/Pitts, D. E.	21-Mathematics
Hartley, H. O.	JSC/Baker, K.	
(72-680 658-10-20)	(72-680 177-51-82)	(72-680 177-42-81)

NAS 9-13904 Texas A&M University System 3310
 Microwave soil moisture measurement and analysis

Period	Obligations	
02/11/74-02/01/76	FY75: \$39,000	TOTAL: \$81,830
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rouse, J. W., Jr.	JSC/Potter, A. E.	39-Env Sci, NEC
(72-680 177-51-84)		

NAS 9-14197 Texas A&M University System 3311
 Remote sensing of wheat identification and yield

Period	Obligations	
06/01/74-05/31/76	FY75: \$30,000	TOTAL: \$30,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rouse, J. L.	JSC/Potter, A. E.	39-Env Sci, NEC
Toler, R. W.	JSC/McPherson, T. M.	
(72-680 177-51-83)		

NAS 9-14429 Texas A&M University System 3312
 Lunar sample irradiation services

Period	Obligations	
10/01/74-09/30/75	FY75: \$18,000	TOTAL: \$18,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Randall, J.	JSC/Clark, R. S.	13-Physics
	JSC/Blanchard, D. P.	
(72-810 383-00-00)		

NAS 9-14470 Texas A&M University System 3313
 Analysis of spectral data for wheat

Period	Obligations	
01/01/75-03/31/76	FY75: \$68,494	TOTAL: \$68,494
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Harlan, C.	JSC/Potter, A. E.	39-Env Sci, NEC
	JSC/McEwen, M. C.	
(72-680 658-10-20)		

NAS 9-14478 Texas A&M University System 3314
 Aeroelastic analytical studies of the space shuttle configurations

Period	Obligations	
09/30/74-08/31/75	FY75: \$65,000	TOTAL: \$65,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cavin, R. K., III	JSC/Hillje, E. R.	41-Aero Engr
Howze, J. W.		
(72-920 986-12-00)	(72-920 986-15-00)	

NAS 9-14493 Texas A&M University System 3315
 Definition and fabrication of an airborne scatterometer radar signal processor

Period	Obligations	
01/20/75-07/31/76	FY75: \$59,900	TOTAL: \$59,900
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Schell, J. A.	JSC/Nitschke, H. A.	49-Engr, NEC
(72-680 640-04-04)		

NAS 9-14514 Texas A&M University System 3316
 Application of remote sensing system III on the IBM 370 computer

Period	Obligations	
03/01/75-08/31/75	FY75: \$26,000	TOTAL: \$26,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Simmons, R.	JSC/McKain, G. E.	39-Env Sci, NEC
	JSC/Chilos, L. F.	
(72-680 177-52-82)		

NAS 9-14556 Texas A&M University System 3317
 Image 100 procedure manual development

Period	Obligations	
02/01/75-08/31/75	FY75: \$32,440	TOTAL: \$32,440
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Guseman, L. F., Jr.	JSC/Nolin, F. D.	21-Mathematics
(72-680 177-00-00)		

NAS 9-14583 Texas A&M University System 3318
 Earth Resources, Survey Symposium

Period	Obligations	
02/10/75-07/31/75	FY75: \$98,900	TOTAL: \$98,900
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Shepard, P. J.	JSC/Zeitler, E.	39-Env Sci, NEC
(72-601 644-01-01)		

NAS 9-14689 Texas A&M University System 3319
 Application of feature selection

Period	Obligations	
06/01/75-06/30/76	FY75: \$34,000	TOTAL: \$34,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Guseman, L. F., Jr.	JSC/Baker, K.	21-Mathematics
Hartley, H. O.	JSC/Potter, A. E.	
(72-680 177-42-81)		

NCA 2-73501 Texas A&M University System 3320
 Trace contaminant control using radiofrequency and dc electrical discharges

Period	Obligations	
01/01/75-06/30/75	FY75: \$9,999	TOTAL: \$9,999
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Flamm, D.	ARC/Zill, L. P.	12-Chemistry
(21-970 970-22-21)		

NGL 44-001-001 Texas A&M University System 3321
 Interdisciplinary space oriented research in physical, life and engineering sciences

Period	Obligations	
02/01/62-01/31/78	FY75: \$175,000	TOTAL: \$1,565,564
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rouse, J. W., Jr.	HQ-P/Vitale, J. A.	39-Env Sci, NEC
	HQ-ER/Lehmann, J.	
(10-371 340-00-00)	(10-680 408-10-03)	

NGR 44-001-081 Texas A&M University System 3322
 Relationships between stratospheric clear air turbulence and synoptic meteorological parameters

Period	Obligations	
02/14/69-08/31/75	FY75: \$21,544	TOTAL: \$106,569
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Scoggins, J. R.	FRC/Ehernberger, L. J.	31-Atmos Sci
(24-702 505-08-10)		

**NASA'S UNIVERSITY PROGRAM
TEXAS (Continued)**

NGR 44-001-117	Texas A&M University System	3323	NAS 9-14438	Texas Tech University	3330
Radiative transfer in realistic planetary atmospheres			West Texas Emergency Medical Service Conference		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
07/19/71-09/30/77	FY75: \$70,000	TOTAL: \$171,420	10/29/74-12/31/75	FY75: \$20,159	TOTAL: \$20,159
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Plass, G. N.	HQ-SL/Fellows, R. F.	31-Atmos Sci	Portnoy, W. M.	JSC/Day, J. L.	53-Other Medical
	HQ-SL/Brunk, W. E.		(72-601 644-01-12)		
(10-840 185-47-81)					
NGR 44-001-152	Texas A&M University System	3324	NAS 1-9685	University of Houston	3331
Magnetic studies of meteorites			Participation in the science planning for the Viking 1975 missions in the area of molecular analysis		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/20/73-06/30/75	FY75:	TOTAL: \$43,310	03/17/70-03/31/77	FY75: \$117,742	TOTAL: \$381,330
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rowe, M. W.	HQ-SM/Bryson, R. P.	32-Geological Sci	Oro, J.	LARC/Williams, T. S., Jr.	39-Env Sci, NEC
	HQ-SM/Allenby, R. J.			LARC/Glenny, W. R.	
(10-810 195-42-67)			(23-840 815-20-00)		
NGR 44-001-157	Texas A&M University System	3325	NAS 9-11676	University of Houston	3332
Development of inviscid inverse transonic solution methods			Characterization of heat transfer in nutrient materials		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
11/13/73-12/14/74	FY75:	TOTAL: \$12,781	04/28/71-03/31/76	FY75: \$10,000	TOTAL: \$74,960
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Carlson, L. A.	LARC/South, J. C., Jr.	41-Aero Engr	Cox, J. E.	JSC/Smith, M. C., Jr.	59-Life Sci, NEC
	LARC/Keller, J. D.		(72-970 970-52-24)	(72-970 970-00-00)	
(23-704 501-06-05)					
NSG 1174	Texas A&M University System	3326	NAS 9-11845	University of Houston	3333
Development of inverse transonic airfoil design methods including boundary layer and viscous interaction effects			Data encoding study for space communication system		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/01/75-04/30/76	FY75: \$14,884	TOTAL: \$14,884	06/14/71-03/31/76	FY75: \$20,000	TOTAL: \$67,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Carlson, L. A.	LARC/South, J. C., Jr.	41-Aero Engr	Simpson, R. S.	JSC/Batson, B. H.	49-Engr, NEC
	LARC/Keller, J. D.		(72-920 986-15-00)	(72-910 914-50-00)	
(23-702 505-06-31)					
NSG 7037	Texas A&M University System	3327	NAS 9-12650	University of Houston	3334
The origin of the genetic code-A physical chemical model of codon assignment			Analysis of management of lunar science investigations at JSC		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/07/74-05/31/76	FY75: \$44,000	TOTAL: \$83,975	03/30/72-06/30/75	FY75:	TOTAL: \$148,105
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fendler, J. H.	HQ-SL/Young, R. S.	12-Chemistry	Jain, A. K.	JSC/Sullivan, L. J.	79-Soc Sci, NEC
Nagyvary, J.			Flannery, W.		
(10-840 192-55-61)			(72-910 914-00-00)		
NSG 9029	Texas Southern University	3328	NAS 9-12777	University of Houston	3335
Collection and concentration of solar energy using Fresnel-type lenses			Applied mathematics in classification analysis		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$24,128	TOTAL: \$24,128	05/24/72-05/31/76	FY75: \$133,000	TOTAL: \$317,350
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Wilson, R. F.	JSC/Shields, V.	43-Chem Engr	Decell, H. P., Jr.	JSC/Baker, K.	21-Mathematics
(72-371 340-00-00)			(72-680 177-42-81)	JSC/Potter, A. E.	
				(72-910 914-00-00)	
NAS 9-11162	Texas Tech University	3329	NAS 9-13262	University of Houston	3336
Insulated ECG electrodes			Development of pine seedling/tissue culture system		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/29/70-02/28/76	FY75: \$30,000	TOTAL: \$104,952	01/15/73-01/14/76	FY75: \$24,900	TOTAL: \$99,900
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Portnoy, W. M.	JSC/Day, J. L.	45-Elec Engr	Cowles, J.	JSC/Zieglschmid, J. F.	51-Biology
(72-970 970-53-30)	(72-970 970-53-00)		(72-970 970-51-62)	(72-970 970-00-00)	

**NASA'S UNIVERSITY PROGRAM
TEXAS (Continued)**

NAS 9-13457	University of Houston	3337	NAS 9-14532	University of Houston	3344
Application of gas chromatography for detection of diseases			Candidate hand controller design		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/17/73-05/26/75	FY75: TOTAL: \$95,000		04/23/75-04/30/76	FY75: \$23,430 TOTAL: \$23,430	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Zlatkis, A.	JSC/Schneider, H. J.	52-Clinical Med	Sheer, D. E.	JSC/Jackson, J. T.	42-Astro Engr
(72-970 970-51-25)			(72-970 970-53-50)	JSC/Lewis, J. L.	
NAS 9-13462	University of Houston	3338	NAS 9-14534	University of Houston	3345
Cross correlation study of surface roughness effects on impulse response using S-193 altimeter data. Skylab-EREP investigation 413M			Development of automated analytical capability for the early detection of diabetes mellitus		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/04/73-05/31/75	FY75: \$19,750 TOTAL: \$49,750		03/01/75-02/29/76	FY75: \$60,150 TOTAL: \$60,150	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hayre, H. S.	JSC/York, L. B.	19-Phys Sci, NEC	Zlatkis, A.	JSC/Schneider, H. J.	53-Other Medical
(72-960 948-63-86)			(72-250 141-95-02)		
NAS 9-14209	University of Houston	3339	NAS 9-14557	University of Houston	3346
Study of astrophysical problems			Image 100 software definition		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/01/74-06/30/76	FY75: \$36,000 TOTAL: \$69,216		02/01/75-08/31/75	FY75: \$25,950 TOTAL: \$25,950	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sheldon, W. R.	JSC/Golden, R. L.	11-Astronomy	Decell, H. P., Jr.	JSC/Hay, D. H.	21-Mathematics
(72-850 188-46-64)			(72-680 177-00-00)		
NAS 9-14316	University of Houston	3340	NAS 9-14629	University of Houston	3347
A study of the future utilization of space environment			Application of high resolution gas chromatography		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/15/74-07/30/75	FY75: \$31,000 TOTAL: \$31,000		05/21/75-06/01/76	FY75: \$49,994 TOTAL: \$49,994	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Eisner, M.	JSC/Allen, J. P.	13-Physics	Zlatkis, A.	JSC/Schneider, H. J.	52-Clinical Med
(72-980 975-50-01)			(72-970 970-51-25)		
NAS 9-14347	University of Houston	3341	NAS 9-14652	University of Houston	3348
Analysis of space shuttle aerodynamics			High energy high weight charged particles dosimetry for the Apollo-Soyuz test project		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
09/05/74-10/31/75	FY75: \$40,000 TOTAL: \$40,000		05/01/75-06/01/76	FY75: \$10,000 TOTAL: \$10,000	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Michalopoulos, C. D.	JSC/Eggleston, J. M.	42-Astro Engr	Pinsky, L. S.	JSC/Bailey, J. V.	13-Physics
(72-920 986-15-00)			(72-930 966-60-00)		
NAS 9-14384	University of Houston	3342	NASW 2691	University of Houston	3349
UV transmittance experimentation			Revised narrative history of the Apollo-Saturn program		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
01/20/75-02/16/76	FY75: \$12,825 TOTAL: \$12,825		06/28/74-08/27/76	FY75: \$8 TOTAL: \$50,459	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Pitts, D. G.	JSC/Homick, J. L.	59-Life Sci, NEC	Unavailable	HQ-AC/Wright, M. D.	73-History
(72-970 970-51-63)			(10-030 010-00-00)		
NAS 9-14516	University of Houston	3343	NCA 2-95502	University of Houston	3350
Hydrogen production econometric studies			Applications of Cartan's theory of differential forms to problems in turbulence		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
12/18/74-09/30/75	FY75: \$20,000 TOTAL: \$20,000		01/01/75-12/31/75	FY75: \$10,662 TOTAL: \$10,662	
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Howell, J. R.	JSC/Downs, W. R.	49-Engr, NEC	Kiehn, R. M.	ARC/Zill, L. P.	41-Aero Engr
Bannerot, R.			(21-702 505-06-12)	(21-704 502-07-01)	
Smith, F. B.					
(72-400 778-60-03)					

**NASA'S UNIVERSITY PROGRAM
TEXAS (Continued)**

NCA 2-95503 University of Houston 3351
Investigation of biological lipid peroxidation
Period Obligations
12/01/74-11/30/75 FY75: \$15,000 TOTAL: \$15,000
Prin. Invest. NASA Tech. Officer CASE Category
Bartel, A. H. ARC/Zill, L. P. 51-Biology
(21-970 970-21-62)

NGL 44-005-041 University of Houston 3352
Study of solar flare particle events and related solar physics
Period Obligations
05/20/66-07/31/76 FY75: TOTAL: \$568,346
Prin. Invest. NASA Tech. Officer CASE Category
Goodman, C. JSC/Golden, R. L. 13-Physics
(72-970 970-51-63)

NGL 44-005-084 University of Houston 3353
Hybrid computation research program
Period Obligations
06/27/68-07/31/74 FY75: TOTAL: \$250,000
Prin. Invest. NASA Tech. Officer CASE Category
Huang, C. J. HQ-P/Redding, E. R. 21-Mathematics
(10-370 183-00-00)

NGL 44-005-090 University of Houston 3354
General research program
Period Obligations
06/04/69-06/30/76 FY75: TOTAL: \$88,023
Prin. Invest. NASA Tech. Officer CASE Category
Huang, C. J. JSC/Eandi, B. K. 49-Engr, NEC
(72-910 914-50-00) (72-910 914-40-00)

NGL 44-005-184 University of Houston 3355
Lunar sample analysis
Period Obligations
02/01/73-01/31/76 FY75: \$12,770 TOTAL: \$111,300
Prin. Invest. NASA Tech. Officer CASE Category
King, E. A., Jr. JSC/Harris, J. W. 32-Geological Sci
(72-810 388-10-01)

NGR 44-005-002 University of Houston 3356
Studies in organic cosmochemistry, including consideration of
compound formation under primitive earth conditions & of organic
material in selected meteorites
Period Obligations
06/18/62-11/30/75 FY75: \$58,200 TOTAL: \$664,905
Prin. Invest. NASA Tech. Officer CASE Category
Oro, J. HQ-SL/Young, R. S. 32-Geological Sci
(10-840 192-55-62) (10-870 189-00-00)

NGR 44-005-091 University of Houston 3357
Spectroscopic and photochemical study of photochromic com-
pounds
Period Obligations
03/07/69-01/31/76 FY75: \$45,000 TOTAL: \$330,000
Prin. Invest. NASA Tech. Officer CASE Category
Becker, R. S. HQ-SL/Young, R. S. 12-Chemistry
(10-840 192-55-61) (10-870 189-00-00)

NGR 44-005-131 University of Houston 3358
Geologic interpretation of Mars surface photography from
Mariners 6 and 7
Period Obligations
10/26/70-12/31/75 FY75: \$18,500 TOTAL: \$91,557
Prin. Invest. NASA Tech. Officer CASE Category
King, E. A., Jr. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Holt, H. E.
(10-840 384-50-80) (10-840 185-50-81)

NGR 44-005-133 University of Houston 3359
Investigation of auroral disturbances
Period Obligations
03/15/71-11/30/75 FY75: \$65,000 TOTAL: \$319,036
Prin. Invest. NASA Tech. Officer CASE Category
Sheldon, W. R. HQ-SG/Berko, F. W. 31-Atmos Sci
HQ-SG/Ott, E. J.
(10-850 879-11-00)

NGR 44-005-137 University of Houston 3360
Thermomagnetic torques in gases
Period Obligations
02/17/71-08/31/76 FY75: TOTAL: \$129,200
Prin. Invest. NASA Tech. Officer CASE Category
Hildebrandt, A. F. JSC/White, D. R. 13-Physics
(72-950 951-00-00) (72-910 914-50-00)

NGR 44-005-188 University of Houston 3361
Investigation of origin of chondritic meteorites
Period Obligations
06/29/73-06/30/74 FY75: TOTAL: \$9,151
Prin. Invest. NASA Tech. Officer CASE Category
King, E. A., Jr. HQ-SM/Bryson, R. P. 32-Geological Sci
HQ-SM/Pomeroy, J. H.
(10-810 195-42-67)

NGT 44-005-114 University of Houston 3362
Program of faculty space systems engineering institute
Period Obligations
04/06/70-03/31/76 FY75: \$90,080 TOTAL: \$604,689
Prin. Invest. NASA Tech. Officer CASE Category
Huang, C. J. HQ-P/Carter, C. H. 49-Engr, NEC
(10-371 340-00-00) (72-950 951-00-00)

NGT 44-005-115 University of Houston 3363
Summer faculty fellowship program in research
Period Obligations
05/06/74-03/31/76 FY75: \$92,858 TOTAL: \$719,696
Prin. Invest. NASA Tech. Officer CASE Category
Huang, C. J. HQ-P/Carter, C. H. 49-Engr, NEC
(10-371 340-00-00) (72-950 951-00-00)

NSG 1103 University of Houston 3364
Effect of acoustic disturbances on the structure of turbulent
flows
Period Obligations
09/23/74-09/22/75 FY75: \$20,000 TOTAL: \$20,000
Prin. Invest. NASA Tech. Officer CASE Category
Hussain, A. F. LARC/Fischer, M. C. 41-Aero Engr
(23-702 505-06-15) (23-702 760-64-60)

**NASA'S UNIVERSITY PROGRAM
TEXAS (Continued)**

NSG 2077 University of Texas - Arlington 3365
Large eddy structure of a turbulent boundary layer

Period	Obligations	
03/15/75-03/14/76	FY75: \$10,162	TOTAL: \$10,162
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Payne, F. R.	ARC/Rubesin, M. W.	41-Aero Engr
(21-704 506-26-22)		

NAS 8-31566 University of Texas - Austin 3372
TEXGAP computer program

Period	Obligations	
06/27/75-06/27/76	FY75: \$11,978	TOTAL: \$11,978
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dunham, R. B.	MSFC/Key, J. E.	21-Mathematics
Beckek, E. B.	MSFC/Bianca, C. J., Jr.	
(62-920 984-15-00)		

NAS 5-20946 University of Texas - Austin 3366
Study of relative satellite motion determination and prediction

Period	Obligations	
02/12/75-02/11/76	FY75: \$38,458	TOTAL: \$38,458
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tapley, B. D.	GSFC/Fuchs, A. J.	49-Engr, NEC
Fowler, W. T.	GSFC/Velez, C. E.	
Schutz, B. E.		
(51-500 310-10-22)		

NAS 9-12568 University of Texas - Austin 3373
Operation, maintenance, & analysis of a data storage unit

Period	Obligations	
05/24/72-07/31/76	FY75:	TOTAL: \$87,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Barnes, T. G., III	JSC/Potter, A. E.	11-Astronomy
(72-840 185-47-32)	(72-850 188-41-55)	

NAS 5-21982 University of Texas - Austin 3367
ATS-F millimeter wave experiment

Period	Obligations	
02/13/74-11/13/75	FY75:	TOTAL: \$95,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Straiton, A. W.	GSFC/Hirschmann, E.	45-Elec Engr
Fannin, B. M.		
(51-620 643-00-00)		

NAS 9-13176 University of Texas - Austin 3374
Ultraviolet stellar astronomy. Skylab experiment

Period	Obligations	
10/02/72-02/11/75	FY75: \$19,954	TOTAL: \$435,991
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Henize, K. G.	JSC/Eichelman, W. F.	11-Astronomy
(72-960 948-80-80)		

NAS 6-2454 University of Texas - Austin 3368
GEOS-C research into solid earth dynamics

Period	Obligations	
03/15/74-03/14/77	FY75: \$30,900	TOTAL: \$60,900
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tapley, B. D.	WFC/Stanley, H. R.	32-Geological Sci
Schutz, B. E.	WFC/Rossi, L. C.	
(53-630 369-07-01)		

NAS 9-13680 University of Texas - Austin 3375
Assessment of real gas effects on the extrapolation of shuttle flow field phenomena to flight conditions

Period	Obligations	
09/27/73-12/15/76	FY75: \$52,500	TOTAL: \$77,476
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bertin, J. J.	JSC/Goodrich, W. D.	41-Aero Engr
(72-920 986-15-00)	(72-980 909-41-02)	

NAS 8-30245 University of Texas - Austin 3369
Equations of conditions for coefficients of Runge-Kutta-Nystrom formulas

Period	Obligations	
09/01/73-04/30/74	FY75:	TOTAL: \$9,321
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bettis, D. G.	MSFC/Fehlberg, E.	21-Mathematics
(62-950 951-00-00)		

NAS 9-13865 University of Texas - Austin 3376
Non-conventional injector orifice study

Period	Obligations	
03/21/74-07/31/75	FY75:	TOTAL: \$17,472
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hickox, C. E.	JSC/Fries, J.	46-Mech Engr
	JSC/Kahl, R. C.	
(72-920 986-15-00)		

NAS 8-30622 University of Texas - Austin 3370
Acquisition and verification of TEXGAP computer program

Period	Obligations	
04/01/74-05/31/75	FY75:	TOTAL: \$10,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Becker, E. B.	MSFC/Key, J. E.	41-Aero Engr
Dunham, R. S.	MSFC/Bianca, C. J., Jr.	
(62-920 984-15-00)		

NAS 9-14405 University of Texas - Austin 3377
Lunar seismic profiling experiment; natural activity study

Period	Obligations	
01/01/75-04/30/76	FY75: \$43,850	TOTAL: \$43,850
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Duennebie, F. D.	JSC/Eichelman, W. F.	32-Geological Sci
(72-810 383-31-00)		

NAS 8-31459 University of Texas - Austin 3371
Analysis of ultraviolet stellar spectra obtained with Skylab experiment S-019

Period	Obligations	
06/30/75-06/30/76	FY75: \$66,000	TOTAL: \$66,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	MSFC/Unavailable	11-Astronomy
(62-850 357-48-04)	(62-850 385-45-00)	

NAS 9-14491 University of Texas - Austin 3378
Absorption pumping. Cryogenic refrigeration study

Period	Obligations	
02/10/75-02/10/76	FY75: \$49,241	TOTAL: \$49,241
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hartwig, W. H.	JSC/Richard, R. R.	49-Engr, NEC
Steinfink, H.	JSC/Nuss, R. W.	
Tchernev, D. I.		
(72-680 640-04-04)		

**NASA'S UNIVERSITY PROGRAM
TEXAS (Continued)**

NAS 9-14581 University of Texas - Austin 3379
Apollo passive seismic experiment
Period *Obligations*
02/01/75-01/31/76 FY75: \$225,000 TOTAL: \$225,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Latham, G. V. JSC/Eichelman, W. F. 13-Physics
(72-810 383-31-00)

NGL 44-012-006 University of Texas - Austin 3380
Research on millimeter wavelength radiation from solar bodies
Period *Obligations*
04/29/63-03/31/78 FY75: TOTAL: \$1,275,152
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cogdell, J. R. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SL/Fellows, R. F.
(10-840 196-41-82) (10-840 185-00-00)

NGL 44-012-045 University of Texas - Austin 3381
A study of ignimbrites in the Cordilleran region as a basis for interpretation of lunar plains
Period *Obligations*
05/31/66-05/01/75 FY75: TOTAL: \$147,886
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Clabaugh, S. E. HQ-SM/Bryson, R. P. 32-Geological Sci
HQ-SM/Allenby, R. J.
(10-840 185-00-00) (10-810 195-00-00)

NGL 44-012-055 University of Texas - Austin 3382
Polarization and time structure of Jovian decametric radiation and the structure of interplanetary plasma
Period *Obligations*
05/25/66-04/30/77 FY75: \$23,128 TOTAL: \$810,055
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Douglas, J. N. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SL/Fellows, R. F.
(10-840 196-41-82) (10-840 185-00-00)

NGL 44-012-133 University of Texas - Austin 3383
General research program
Period *Obligations*
09/17/69-09/15/76 FY75: TOTAL: \$66,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
McKetta, J. J. JSC/Eandi, B. K. 49-Engr, NEC
(72-910 914-50-00)

NGR 44-012-152 University of Texas - Austin 3384
A program of planetary studies
Period *Obligations*
06/25/69-08/31/75 FY75: \$340,247 TOTAL: \$1,995,188
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Trafton, L. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SL/Fellows, R. F.
(10-840 196-41-80) (10-850 188-41-51)

NGR 44-012-165 University of Texas - Austin 3385
Continuation of lunar laser ranging experiments at McDonald Observatory
Period *Obligations*
10/11/69-08/31/75 FY75: TOTAL: \$1,832,246
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Silverberg, E. C. HQ-SM/Strickland, A. T. 32-Geological Sci
(10-810 387-30-01) (10-810 383-00-00) (10-810 195-43-50)

NGR 44-012-194 University of Texas - Austin 3386
Morphologic and tectonic studies of Mars from Mariner 6 and 7 photographs
Period *Obligations*
10/01/70-09/30/75 FY75: \$7,380 TOTAL: \$40,462
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ingerson, F. E. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Holt, H. E.
(10-840 384-50-80)

NGR 44-012-209 University of Texas - Austin 3387
Study of optical properties of X-ray source
Period *Obligations*
05/26/71-11/30/75 FY75: \$10,943 TOTAL: \$47,894
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Vanden Bout, P. A. HQ-SG/Rosendhal, J. D. 11-Astronomy
HQ-SG/Roman, N. G.
(10-850 385-41-00) (10-850 878-00-00)

NGR 44-012-219 University of Texas - Austin 3388
Lunar motion analysis (lunar laser ranging experiment)
Period *Obligations*
08/11/71-08/31/75 FY75: \$72,000 TOTAL: \$329,543
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mulholland, J. D. HQ-SM/Strickland, A. T. 11-Astronomy
(10-810 387-30-01) (10-810 383-09-56)

NGR 44-012-221 University of Texas - Austin 3389
Fluctuations under a turbulent boundary layer
Period *Obligations*
10/07/71-05/31/75 FY75: TOTAL: \$119,741
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Panton, R. L. ARC/Coe, C. F. 41-Aero Engr
(21-740 134-00-00)

NGR 44-012-224 University of Texas - Austin 3390
Performance and adjustment of isolated environments
Period *Obligations*
06/17/72-11/30/74 FY75: TOTAL: \$81,700
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Helmreich, A. L. JSC/Fedderson, W. E. 69-Psych, NEC
(72-970 970-51-51) (72-910 914-51-00) (72-910 914-00-00)

NGR 44-012-225 University of Texas - Austin 3391
Stable carbon isotope ratio variations in blue-green algae as a function of growth conditions
Period *Obligations*
06/20/72-07/31/75 FY75: TOTAL: \$37,916
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Parker, P. L. HQ-SL/Young, R. S. 32-Geological Sci
Van Baalen, C.
(10-840 192-55-62) (10-840 192-00-00)

NGR 44-012-240 University of Texas - Austin 3392
Josephson junction detector system for studies of the spectra of Jupiter and Venus
Period *Obligations*
02/15/73-08/31/76 FY75: TOTAL: \$9,991
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ulrich, B. T. ARC/Mason, R. H. 11-Astronomy
(21-850 352-02-01)

**NASA'S UNIVERSITY PROGRAM
TEXAS (Continued)**

NGR 44-012-255 University of Texas - Austin 3393
Investigation of highly efficient satellite solution methods
Period *Obligations*
03/01/73-09/30/73 FY75: TOTAL: \$15,191
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Nacozy, P. E. GSFC/Velez, C. E. 21-Mathematics
Scheifele, G. S.
(51-500 311-80-41)

NGR 44-012-258 University of Texas - Austin 3394
Stark broadening of heavy neutral atoms and ions
Period *Obligations*
02/00/32-07/31/75 FY75: \$11,000 TOTAL: \$22,000
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Bengtson, P. D. HQ-SG/Jordan, S. D. 11-Astronomy
HQ-SG/Timothy, A. F.
(10-850 188-38-53)

NGR 44-012-260 University of Texas - Austin 3395
High resolution spectrograph for the large space telescope
Period *Obligations*
10/01/73-02/29/76 FY75: \$3,002 TOTAL: \$13,051
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Tull, R. G. GSFC/Sobieski, S. 11-Astronomy
GSFC/Meese, K. J.
(51-850 188-78-58)

NGR 44-012-261 University of Texas - Austin 3396
Low resolution spectrograph for the large space telescope
Period *Obligations*
10/01/73-11/30/75 FY75: TOTAL: \$8,857
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Nather, R. E. GSFC/Sobieski, S. 11-Astronomy
GSFC/Meese, K. J.
(51-850 188-78-58)

NGR 44-012-263 University of Texas - Austin 3397
Diffraction limited camera for the large space telescope
Period *Obligations*
10/22/73-12/31/74 FY75: TOTAL: \$354
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Angel, J. R. GSFC/Sobieski, S. 11-Astronomy
GSFC/Levin, G. M.
(51-850 188-78-58)

NGR 44-012-269 University of Texas - Austin 3398
Development of efficient methods for satellite determination and prediction
Period *Obligations*
09/17/73-09/16/75 FY75: \$35,000 TOTAL: \$81,370
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Tapley, B. D. GSFC/Fuchs, A. J. 49-Engr, NEC
Nacozy, P. E. GSFC/Velez, C. E.
Schutz, B. E.
(51-500 310-10-22)

NGR 44-012-279 University of Texas - Austin 3399
Atlas of Mariner 9 albedo charts of Mars
Period *Obligations*
07/01/73-06/30/75 FY75: \$15,000 TOTAL: \$45,000
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Devaucouleurs, G. H. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Allingham, J. W.
(10-840 384-50-81) (10-840 384-50-80)

NGR 44-012-282 University of Texas - Austin 3400
Outer planet satellite studies
Period *Obligations*
09/01/73-08/31/75 FY75: \$39,523 TOTAL: \$77,863
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Mulholland, J. D. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SL/Fellows, R. F.
(10-840 196-41-80)

NGR 44-012-283 University of Texas - Austin 3401
Precision orbit determination for near-earth satellites
Period *Obligations*
01/14/74-03/13/76 FY75: \$40,410 TOTAL: \$54,410
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Tapley, B. D. GSFC/Marsh, J. G. 32-Geological Sci
Schutz, B. E.
(51-630 161-03-03) (51-630 161-04-02) (51-630 161-02-02)

NSG 1001 University of Texas - Austin 3402
Reduction of interface coordinates for substructure coupling
Period *Obligations*
01/02/74-08/31/75 FY75: TOTAL: \$22,599
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Craig, R. R. LARC/Pinson, L. D. 49-Engr, NEC
(23-704 502-32-02)

NSG 2065 University of Texas - Austin 3403
Antecedents of achievement and creativity
Period *Obligations*
02/01/75-02/01/76 FY75: \$39,500 TOTAL: \$39,500
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Helmreich, R. L. ARC/Tanner, T. A. 69-Psych, NEC
(21-970 970-21-51)

NSG 5005 University of Texas - Austin 3404
Observations of emission lines in M supergiants
Period *Obligations*
05/01/74-06/30/76 FY75: \$11,535 TOTAL: \$20,778
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Lambert, D. L. GSFC/Kupperian, J. E. 11-Astronomy
(51-850 831-42-00)

NSG 5031 University of Texas - Austin 3405
Investigation of chlorine abundances in early-type stars
Period *Obligations*
11/01/74-10/31/75 FY75: \$2,000 TOTAL: \$2,000
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Parsons, S. B. GSFC/Kupperian, J. E. 11-Astronomy
(51-850 831-42-00)

NSG 9021 University of Texas - Austin 3406
Origin of magnetization in lunar breccias and its bearing on their formation
Period *Obligations*
02/01/75-01/31/76 FY75: \$23,625 TOTAL: \$23,625
Prtn. Invest. *NASA Tech. Officer* *CASE Category*
Gose, W. A. JSC/Harris, J. W. 32-Geological Sci
(72-810 388-10-03)

**NASA'S UNIVERSITY PROGRAM
TEXAS (Continued)**

NAS 1-9699 University of Texas - Dallas **3407**
Participation in the science planning for the Viking 1975 missions
in the area of entry science

<i>Period</i>	<i>Obligations</i>	
04/08/70-03/31/77	FY75: \$8,500	TOTAL: \$160,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hanson, W. B.	LARC/Williams, T. S., Jr.	99-Multi-Discip
	LARC/Glenny, W. R.	

(23-840 815-20-00)

NAS 2-7865 University of Texas - Dallas **3408**
Design and development of a large probe neutral mass spectrometer

<i>Period</i>	<i>Obligations</i>	
08/31/73-05/09/75	FY75: \$328,976	TOTAL: \$498,976
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hoffman, J. H.	ARC/Polaski, L. J.	31-Atmos Sci
(21-840 825-20-00)	(21-840 186-68-63)	

NAS 2-8802 University of Texas - Dallas **3409**
Pioneer/Venus neutral mass spectrometer

<i>Period</i>	<i>Obligations</i>	
05/12/75-08/31/78	FY75: \$240,000	TOTAL: \$240,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hoffman, J. H.	ARC/Hall, C. F.	31-Atmos Sci
York, D. R.	ARC/Polaski, L. R.	
(21-840 825-20-00)		

AS 5-11406 University of Texas - Dallas **3410**
Atmosphere Explorer magnetic ion mass spectrometer

<i>Period</i>	<i>Obligations</i>	
04/06/71-09/30/77	FY75: \$135,000	TOTAL: \$864,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hansen, W. B.	GSFC/Findlay, J. A.	31-Atmos Sci
(51-850 852-22-00)		

IAS 5-11407 University of Texas - Dallas **3411**
Planar ion trap experiment

<i>Period</i>	<i>Obligations</i>	
04/06/71-11/15/77	FY75: \$172,000	TOTAL: \$962,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hoffman, R.	GSFC/Findlay, J. A.	31-Atmos Sci
(51-850 852-22-00)		

NAS 9-12074 University of Texas - Dallas **3412**
Scientific support of the lunar atmospheric mass spectrometer

<i>Period</i>	<i>Obligations</i>	
08/26/71-09/30/75	FY75:	TOTAL: \$468,848
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hoffman, J. H.	JSC/Eichelman, W. F.	19-Phys Sci, NEC
(72-810 383-25-03)	(72-910 914-40-00)	

NAS 9-13512 University of Texas - Dallas **3413**
Development of a mathematical technique for analysis of remote sensing data

<i>Period</i>	<i>Obligations</i>	
05/31/73-05/31/76	FY75: \$55,000	TOTAL: \$154,995
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Odell, P. L.	JSC/Baker, K.	21-Mathematics
	JSC/Potter, A. E.	
(72-680 177-42-81)	(72-680 160-00-00)	

NGL 44-004-001 University of Texas - Dallas **3414**
Research in earth and planetary sciences, including development
of advanced scientific experiments in lunar, planetary and space
exploration

<i>Period</i>	<i>Obligations</i>	
05/28/62-03/01/75	FY75:	TOTAL: \$6,441,277
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Johnson, F. S.	HQ-SL/Fellows, R. F.	31-Atmos Sci
Hanson, W. B.	HQ-SL/Hipsler, H. F.	
(10-370 183-00-00)	(10-840 185-00-00)	

NGL 44-004-026 University of Texas - Dallas **3415**
Investigations into the mechanism and rates of atmospheric mixing
in the lower thermosphere

<i>Period</i>	<i>Obligations</i>	
05/05/65-03/31/78	FY75: \$500,000	TOTAL: \$1,773,751
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Johnson, F. S.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	
(10-840 185-47-81)	(10-840 384-47-81)	

NGL 44-004-130 University of Texas - Dallas **3416**
Selected studies in the space sciences

<i>Period</i>	<i>Obligations</i>	
03/17/72-03/31/78	FY75: \$200,000	TOTAL: \$800,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Johnson, F. S.	HQ-P/Redding, E. R.	99-Multi-Discip
(10-371 340-00-00)		

NGR 44-004-030 University of Texas - Dallas **3417**
Study of electron collision frequency under ionospheric conditions

<i>Period</i>	<i>Obligations</i>	
05/05/65-08/31/75	FY75: \$20,000	TOTAL: \$565,765
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Heikkila, W. J.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Schmerling, E. R.	
(10-850 188-36-56)	(10-850 188-00-00)	

NGR 44-004-116 University of Texas - Dallas **3418**
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
01/13/71-01/31/76	FY75: \$25,000	TOTAL: \$209,480
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Carter, J. L.	JSC/Harris, J. W.	13-Physics
(72-810 388-10-01)		

NGR 44-004-120 University of Texas - Dallas **3419**
Rocket probes for the upper F-region

<i>Period</i>	<i>Obligations</i>	
02/09/71-01/31/76	FY75: \$160,000	TOTAL: \$715,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Hanson, W. B.	HQ-SG/Berko, F. W.	31-Atmos Sci
	HQ-SG/Ott, E. J.	
(10-850 385-36-00)	(10-850 879-11-00)	(10-850 879-00-00)

NGR 44-004-124 University of Texas - Dallas **3420**
Rocket investigation of auroral zone disturbances

<i>Period</i>	<i>Obligations</i>	
08/10/71-06/30/75	FY75: \$100,000	TOTAL: \$520,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Heikkila, W. J.	HQ-SG/Berko, F. W.	13-Physics
	HQ-SG/Ott, E. J.	
(10-850 879-11-00)		

**NASA'S UNIVERSITY PROGRAM
TEXAS (Continued)**

NGR 44-088-002 Univ of Texas Medical Branch - Galveston 3434
Mechanisms of cerebral blood flow changes during acceleration stress

<i>Period</i>	<i>Obligations</i>	
10/13/71-11/01/75	FY75: \$34,907	TOTAL: \$116,886
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Stone, H. L.	ARC/Sandler, H.	52-Clinical Med
(21-970 970-21-12)	(21-970 970-21-00)	

NGR 44-088-008 Univ of Texas Medical Branch - Galveston 3435
Lunar sample analysis

<i>Period</i>	<i>Obligations</i>	
02/01/74-07/31/75	FY75:	TOTAL: \$9,160
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lindsay, J. F.	JSC/Harris, J. W.	51-Biology
(72-910 914-40-00)		

NSG 7074 Univ of Texas Medical Branch - Galveston 3436
Investigation of the geophysical implications of a transportable lunar laser

<i>Period</i>	<i>Obligations</i>	
07/01/74-06/30/75	FY75: \$19,714	TOTAL: \$19,714
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lammlein, D. R.	HQ-SM/Strickland, A. T.	32-Geological Sci

Latham, G. V.
Dorman, H. J.
(10-810 387-30-01)

NAS 2-3082 University of Texas Health Center - Dallas 3437
Flight hardware for biosatellite experiment

<i>Period</i>	<i>Obligations</i>	
06/29/69-06/01/75	FY75:	TOTAL: \$234,841
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Unavailable	ARC/Unavailable	51-Biology
(21-870 883-00-00)		

NSG 9026 University of Texas Health Center - Dallas 3438
Cardiovascular effect of variations in habitual levels of physical activity

<i>Period</i>	<i>Obligations</i>	
03/01/75-02/28/76	FY75: \$60,900	TOTAL: \$60,900
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Blomquist, C. G.	JSC/Hoffler, G. W.	52-Clinical Med
Mitchell, J. H.		
(72-970 970-51-12)		

NGR 44-094-003 Univ of Texas Health Center - San Antonio 3439
Role of systemic & renal hemodynamics

<i>Period</i>	<i>Obligations</i>	
08/01/73-06/30/76	FY75: \$45,000	TOTAL: \$130,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Earley, L. E.	JSC/Hoffler, G. W.	53-Other Medical
(72-970 970-51-12)	(72-970 970-00-00)	

NSG 9012 Univ of Texas Health Center - San Antonio 3440
Effects of chronic stress on the chemistry of brain amines

<i>Period</i>	<i>Obligations</i>	
08/01/74-07/31/75	FY75: \$24,000	TOTAL: \$24,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Morgan, W. W.	JSC/Leach, C. S.	52-Clinical Med
(72-970 970-51-16)		

NGL 44-084-003 Univ of Texas-School of Public Health 3441
Remote sensing utility in a disaster-struck area

<i>Period</i>	<i>Obligations</i>	
09/01/73-11/30/76	FY75:	TOTAL: \$100,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Rush, M.	HQ-P/Vitale, J. A.	59-Life Sci, NEC
	JSC/Kennedy, E. E.	
(10-371 340-00-00)		

NGR 44-015-003 West Texas State University 3442
Geology of mare acidialium quadrangle MO-4 on Mars

<i>Period</i>	<i>Obligations</i>	
04/25/73-03/31/76	FY75:	TOTAL: \$20,500
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Underwood, J. R.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Holt, H. E.	
(10-840 384-50-80)		

UTAH

NAS 2-7358 Brigham Young University 3443
Analysis of Pioneer F & G solar terrestrial relationship data

<i>Period</i>	<i>Obligations</i>	
01/08/73-06/30/76	FY75: \$19,700	TOTAL: \$34,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jones, D. E.	ARC/Hall, C. F.	13-Physics
	ARC/Porter, D. L.	
(21-840 811-22-00)		

NAS 9-14499 Brigham Young University 3444
Study scanning electron microscopy glass particles produced by lava fountain eruptions

<i>Period</i>	<i>Obligations</i>	
01/01/75-06/30/76	FY75: \$22,750	TOTAL: \$22,750
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ladle, G. H.	JSC/Phinney, W. C.	32-Geological Sci
(72-810 195-25-99)		

NGR 45-001-011 Brigham Young University 3445
Analysis and interpretation of magnetic field measurements between Earth and Mars received from Mariner IV

<i>Period</i>	<i>Obligations</i>	
05/10/65-09/30/75	FY75:	TOTAL: \$206,571
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jones, D. E.	HQ-SG/Berko, F. W.	39-Env Sci, NEC
(10-850 385-36-00)		

NGR 45-001-032 Brigham Young University 3446
Microwave studies of planetary atmospheres

<i>Period</i>	<i>Obligations</i>	
06/05/70-08/31/75	FY75:	TOTAL: \$16,100
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jones, D. E.	HQ-SL/Brunk, W. E.	11-Astronomy
(10-840 196-00-00)		

NASA'S UNIVERSITY PROGRAM

UTAH (Continued)

NGR 45-001-040 **Brigham Young University** **3447**
 Studies of lunar magnetism & interplanetary plasma dis-
 continuities
Period *Obligations*
 11/21/73-11/20/76 **FY75:** **TOTAL: \$48,904**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Jones, D. E. **ARC/Dyal, P.** **13-Physics**
 Daily, W. D. **ARC/Witteborn, F. C.**
 (21-810 383-25-03)

NSG 3068 **Brigham Young University** **3448**
 Microwave diagnostic instrumentation for steady state plasma
Period *Obligations*
 01/01/75-12/31/76 **FY75: \$11,000** **TOTAL: \$11,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Gardner, A. L. **LERC/Roth, J. R.** **13-Physics**
 LERC/Seikel, G. R.
 (22-704 506-25-11)

NAS 1-12705 **University of Utah** **3449**
 Science planning for the Viking 1975 missions in the area of
 physical properties
Period *Obligations*
 01/14/74-03/31/77 **FY75: \$42,044** **TOTAL: \$89,339**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Shorthill, R. W. **LARC/Williams, T. S., Jr.** **19-Phys Sci, NEC**
 LARC/Glenny, W. R.
 (23-840 815-20-00)

NAS 2-8244 **University of Utah** **3450**
 Study to determine pyrolysis & combustion products of
 polymers
Period *Obligations*
 04/15/74-06/30/75 **FY75: \$72,672** **TOTAL: \$110,289**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Petatjan, J. H. **ARC/Kourtidis, D. A.** **12-Chemistry**
 Packham, S. C. **ARC/Parker, J. A.**
 Einhorn, I. N. (21-702 505-01-32)
 (21-704 501-21-22)

NAS 5-20955 **University of Utah** **3451**
 ERTS data follow-on investigation
Period *Obligations*
 03/13/75-10/13/76 **FY75: \$65,000** **TOTAL: \$65,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Nackowski, M. **GSFC/Broderick, J.** **32-Geological Sci**
 (51-680 641-15-00)

NAS 6-1908 **University of Utah** **3452**
 Meteorological rocket instrumentation and data processing
 experiments
Period *Obligations*
 10/06/70-11/05/74 **FY75:** **TOTAL: \$153,122**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Staffanson, F. L. **WFC/Schmidlin, F. J.** **31-Atmos Sci**
 Tal, J. (53-680 607-07-00)

NAS 6-2498 **University of Utah** **3453**
 Upper atmospheric physical and dynamic processes
Period *Obligations*
 04/26/74-04/25/76 **FY75:** **TOTAL: \$47,600**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Kao, S. K. **WFC/Duke, J. R.** **31-Atmos Sci**
 (53-680 607-07-00)

NAS 6-2627 **University of Utah** **3454**
 Rocketsonde data processing and participation in the meteorologi-
 cal rocket/Nimbus satellite data comparison project
Period *Obligations*
 03/21/75-12/21/75 **FY75: \$40,000** **TOTAL: \$40,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Staffanson, F. L. **WFC/Duke, J. R.** **31-Atmos Sci**
 WFC/Schmidlin, F. J.
 (53-680 607-07-00)

NAS 8-30253 **University of Utah** **3455**
 Preparation and investigation of methacrylate hydrogels for zeta
 potential control
Period *Obligations*
 11/15/73-12/14/76 **FY75: \$49,622** **TOTAL: \$101,020**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Andrade, J. D. **MSFC/Patterson, W. J.** **12-Chemistry**
 MSFC/Allen, R. E.
 (62-630 179-13-11) (62-930 966-30-00) (62-630 179-25-12)

NAS 9-12168 **University of Utah** **3456**
 Apollo lunar sounder experiment
Period *Obligations*
 09/13/71-12/31/74 **FY75:** **TOTAL: \$1,728,580**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Ward, S. H. **JSC/Lafferty, P. E.** **32-Geological Sci**
 (72-810 383-30-01) (72-910 914-49-00)

NAS 9-13322 **University of Utah** **3457**
 Geology of Utah & Nevada
Period *Obligations*
 03/10/73-05/31/75 **FY75: \$9,000** **TOTAL: \$47,900**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Jensen, M. L. **JSC/Miller, M. L.** **32-Geological Sci**
 (72-680 652-01-83) (72-960 948-63-83)

NASW 2648 **University of Utah** **3458**
 Studying the earth from space
Period *Obligations*
 05/21/74-06/05/75 **FY75: \$20** **TOTAL: \$15,074**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Ridd, M. K. **HQ-FE/Tuttle, F. B.** **39-Env Sci, NEC**
 McCoy, R. M. **HQ-FE/Ahrendt, M. H.**
 (10-030 010-00-00)

NCA 2-21601 **University of Utah** **3459**
 Bio-telemetry systems in calves with artificial hearts
Period *Obligations*
 07/01/75-06/30/76 **FY75: \$3,000** **TOTAL: \$3,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Smith, L. M. **ARC/Zill, L. P.** **51-Biology**
 (21-970 970-21-12)

**NASA'S UNIVERSITY PROGRAM
UTAH (Continued)**

NGL 45-003-025	University of Utah	3460							
Investigation of meteorological measurement techniques up to 100 kilometers									
<i>Period</i>		<i>Obligations</i>							
12/15/65-07/31/76	FY75: \$45,000	TOTAL: \$649,727							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Weil, H.	LARC/Hardesty, C. A.	31-Atmos Sci							
Senior, T. B.									
(23-680 607-06-00)	(23-680 607-00-00)								
NGR 45-003-090	University of Utah	3461							
Lunar sample analysis									
<i>Period</i>		<i>Obligations</i>							
02/08/72-07/31/75	FY75:	TOTAL: \$100,400							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Ward, S. H.	JSC/Harris, J. W.	32-Geological Sci							
(72-810 388-10-03)									
NGR 45-003-093	University of Utah	3462							
Study a partial through crack on a plate of finite thickness									
<i>Period</i>		<i>Obligations</i>							
03/21/72-08/31/75	FY75:	TOTAL: \$37,850							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Folias, E. S.	JSC/Foreman, R. G.	21-Mathematics							
(72-980 908-00-00)									
NGR 45-003-095	University of Utah	3463							
Analysis of the geologic cycle of Mars									
<i>Period</i>		<i>Obligations</i>							
06/29/72-02/29/76	FY75: \$11,500	TOTAL: \$40,412							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Wilson, R. C.	HQ-SL/Dwornik, S. E.	32-Geological Sci							
Picard, M. D.	HQ-SL/Holt, H. E.								
(10-840 384-50-80)	(10-840 384-00-00)								
NGR 45-003-108	University of Utah	3464							
Applications of computer speech recognition in flight management									
<i>Period</i>		<i>Obligations</i>							
11/01/73-10/01/75	FY75: \$14,880	TOTAL: \$28,829							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Plummer, R. P.	ARC/Coler, C. R.	45-Elec Engr							
(21-704 504-09-33)									
NSG 1113	University of Utah	3465							
Supporting tests for dynamic model tests of space shuttle									
<i>Period</i>		<i>Obligations</i>							
10/08/74-09/13/75	FY75: \$13,373	TOTAL: \$13,373							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Hufferd, W. L.	LARC/Sewall, J. L.	42-Astro Engr							
	LARC/Blanchard, U. J.								
(23-704 506-17-32)									
NSG 1160	University of Utah	3466							
Assessment of noise from light aircraft									
<i>Period</i>		<i>Obligations</i>							
04/01/75-10/31/75	FY75: \$13,431	TOTAL: \$13,431							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Shepherd, K. P.	LARC/Lawton, B. W.	69-Psych, NEC							
	LARC/Powell, C. A.								
(23-704 504-09-11)									
NSG 7090	University of Utah	3467							
Lunar data synthesis									
<i>Period</i>		<i>Obligations</i>							
07/01/74-06/30/76	FY75: \$102,400	TOTAL: \$102,400							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Ward, S. H.	HQ-SM/Bryson, R. P.	32-Geological Sci							
	HQ-SM/Roberson, F. I.								
(10-810 383-20-01)									
NSG 9024	University of Utah	3468							
Origin, evolution, and crystallization of lunar magmas									
<i>Period</i>		<i>Obligations</i>							
02/01/75-01/31/76	FY75: \$30,000	TOTAL: \$30,000							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Nash, W. P.	JSC/Harris, J. W.	32-Geological Sci							
(72-810 388-10-03)									
NAS 2-8108	Utah State University	3469							
Gas for stratospheric sampling program									
<i>Period</i>		<i>Obligations</i>							
02/01/74-01/31/76	FY75: \$14,315	TOTAL: \$18,505							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Shaw, A. W.	ARC/Lowenstein, M.	31-Atmos Sci							
	ARC/Savage, H. F.								
(21-920 989-15-00)	(21-680 177-53-13)	(21-680 176-61-11)							
NCA 2-20501	Utah State University	3470							
Application of linear quadratic techniques to problems of reliability									
<i>Period</i>		<i>Obligations</i>							
09/09/74-09/01/75	FY75: \$14,075	TOTAL: \$14,075							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Martin, C. F.	ARC/Zill, L. P.	21-Mathematics							
(21-702 505-07-11)	(21-702 512-53-02)	(21-704 501-23-33)							
NGR 45-002-008	Utah State University	3471							
Response of higher plants to ultraviolet light and other stress factors									
<i>Period</i>		<i>Obligations</i>							
11/22/66-08/31/75	FY75:	TOTAL: \$206,806							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Salisbury, F. B.	HQ-SL/Geib, D. S.	51-Biology							
(10-840 192-55-64)									
NGR 45-002-016	Utah State University	3472							
Application of the comparison principle to analysis of nonlinear systems									
<i>Period</i>		<i>Obligations</i>							
06/24/70-02/28/75	FY75:	TOTAL: \$49,538							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Gunderson, R. W.	ARC/Doolin, B. F.	21-Mathematics							
Martin, C.	ARC/Meyer, G.								
(21-704 501-03-11)	(21-750 135-00-00)								
NSG 2022	Utah State University	3473							
Seminar workshop on large scale dynamic systems									
<i>Period</i>		<i>Obligations</i>							
05/01/74-09/01/75	FY75:	TOTAL: \$8,910							
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>							
Martin, C.	ARC/Doolin, B. F.	49-Engr, NEC							
(21-704 501-03-11)									

NASA'S UNIVERSITY PROGRAM
VIRGINIA (Continued)

NSG 1095	College of William And Mary	3487	NGR 47-020-005	Hampton Institute	3494
Molecular weight-property relationships of high performance polymers used for adhesives and composites			High temperature kinetics studies of combustion processes by the shock tube technique		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
09/01/74-08/31/76	FY75: \$14,813	TOTAL: \$14,813	03/21/73-07/31/74	FY75:	TOTAL: \$19,073
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kranbuehl, D. E.	LARC/Young, P. R.	12-Chemistry	Hunter, C. E.	HQ-P/Pohly, J. G.	13-Physics
	LARC/Jewell, R. A.		(10-701 599-85-00)	(10-371 340-00-00)	
(23-702 505-01-34)					
NSG 1173	College of William And Mary	3488	NGR 47-020-006	Hampton Institute	3495
Construction of prototypes of a new class of infrared detectors			Fast optical pulse recording system for laser ranging		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/01/75-08/15/75	FY75: \$5,495	TOTAL: \$5,495	12/01/73-11/30/75	FY75: \$22,510	TOTAL: \$41,755
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sher, A.	LARC/Breckenridge, R. A.	13-Physics	Trehan, A. K.	WFC/Kim, H. H.	19-Phys Sci, NEC
	LARC/Crouch, R. K.		(53-371 340-00-00)	WFC/Parsons, C. L.	
(23-704 506-18-21)					
NSG 1203	College of William And Mary	3489	NGR 47-020-008	Hampton Institute	3496
Analysis of remote sensors for pollution			Mossbauer effect and its application in material research		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
08/01/75-07/31/76	FY75: \$25,103	TOTAL: \$25,103	01/01/74-12/31/75	FY75: \$12,441	TOTAL: \$45,187
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Park, J. H.	LARC/Russell, J. M., III	31-Atmos Sci	Han, K. S.	LARC/Singh, J. J.	13-Physics
	LARC/Davis, R. E.		(23-371 340-00-00)		
(23-680 176-21-31)					
NSG 1204	College of William And Mary	3490	NSG 1011	Hampton Institute	3497
Chemistry of the system: A12sub0sub3 (C)-HCl aq.			Factors affecting aircraft ride quality: the effects of noise, motion, and the individual		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
06/15/75-06/14/76	FY75: \$22,994	TOTAL: \$22,994	04/01/74-01/31/76	FY75: \$55,104	TOTAL: \$103,104
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tyree, S. Y., Jr.	LARC/Cofer, W. R., III	12-Chemistry	Duncan, N. C.	LARC/Catherines, J. J.	69-Psych, NEC
	LARC/Pellett, G. L.		Conley, H. W.	LARC/Mixson, J. S.	
(23-704 506-21-30)			(23-371 340-00-00)		
NSG 7073	College of William And Mary	3491	NSG 1086	Hampton Institute	3498
The response of hematopoietic stem cells to different linear energy transfer distribution of helium ion beams			High temperature kinetics studies of combustion processes by the shock tube technique		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/23/74-12/31/75	FY75: \$20,000	TOTAL: \$20,000	08/01/74-10/31/75	FY75: \$31,506	TOTAL: \$31,506
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Aceto, H., Jr.	HQ-MM/Jones, W. L.	59-Life Sci, NEC	Hunter, C. E.	LARC/Jachimowski, C. J.	12-Chemistry
(10-970 970-14-01)			(23-371 340-00-00)		
NAS I-12445	Hampton Institute	3492	NSG 1146	Hampton Institute	3499
Conversion of government owned VGH flight records into numerical tabulations for FY 74			Design and fabrication of a high resolution CRT/interface system		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
05/30/73-06/30/76	FY75: \$35,940	TOTAL: \$94,558	02/03/75-02/02/76	FY75: \$16,162	TOTAL: \$16,162
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Williams, G. K.	LARC/Jewell, J. W., Jr.	41-Aero Engr	Trehan, A. K.	LARC/Katzberg, S. J.	45-Elec Engr
(23-702 505-08-20)			(23-371 340-00-00)	LARC/Rowland, C. W.	
NGR 47-020-004	Hampton Institute	3493	NSG 1162	Hampton Institute	3500
Physical and psychological factors affecting passenger comfort in airplanes			Space and energy conservation housing prototype unit development		
<i>Period</i>	<i>Obligations</i>		<i>Period</i>	<i>Obligations</i>	
02/01/73-03/31/74	FY75:	TOTAL: \$72,251	04/01/75-07/31/75	FY75: \$3,900	TOTAL: \$3,900
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>	<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Handy, J. W.	HQ-P/Pohly, J. G.	69-Psych, NEC	Sunshine, D. R.	LARC/Marushi, C. B.	49-Engr, NEC
(10-371 340-00-00)	(10-701 599-85-00)		(23-250 141-95-01)	LARC/Kirby, C. E.	

**NASA'S UNIVERSITY PROGRAM
VIRGINIA (Continued)**

NSG 1209 Mary Baldwin College 3501
Faculty and student research participation in applied statistics
as NASA/LRC

<i>Period</i>	<i>Obligations</i>	
07/01/75-04/30/76	FY75: \$7,904	TOTAL: \$7,904
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Sawyer, J. O.	LARC/Campbell, J. W.	21-Mathematics
(23-704 750-02-01)		

NSG 1014 Norfolk State College 3502
Numerical computations research

<i>Period</i>	<i>Obligations</i>	
04/01/74-06/30/76	FY75: \$29,865	TOTAL: \$58,375
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Boseman, M.	LARC/Shoosmith, J. N.	21-Mathematics
	LARC/Hogge, J. E.	
(23-371 340-00-00)		

NSG 1073 Norfolk State College 3503
Self instructional component on basic materials science for
orientation to space age technology

<i>Period</i>	<i>Obligations</i>	
07/01/74-12/31/75	FY75: \$25,498	TOTAL: \$53,404
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Jacobs, J. A.	LARC/Mehrens, H. E.	49-Engr, NEC
Kilduff, T. F.	LARC/Parker, M. H.	
(23-704 501-97-01)	(23-371 340-00-00)	(23-680 176-00-00)

NSG 1074 Norfolk State College 3504
Comfort judgements as a function of passenger and noise and
vibration encountered on urban mass transit vehicles

<i>Period</i>	<i>Obligations</i>	
07/01/74-08/31/75	FY75:	TOTAL: \$43,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Colegate, R. L.	LARC/Stephens, D.G.	59-Life Sci, NEC
Colson, W. N.		
(23-371 340-00-00)	(23-704 504-29-12)	

NSG 1145 Norfolk State College 3505
Tidewater Virginia area transportation survey study

<i>Period</i>	<i>Obligations</i>	
01/20/75-09/19/75	FY75: \$13,337	TOTAL: \$13,337
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ficht, J. C.	LARC/Conner, D. W.	79-Soc Sci, NEC
	LARC/Snyder, W. J.	
(23-371 340-00-00)		

NAS 1-9434 Old Dominion University 3506
Research in physical and engineering sciences

<i>Period</i>	<i>Obligations</i>	
07/23/69-06/01/75	FY75:	TOTAL: \$830,402
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ousterhout, D. S.	LARC/Martin, D. J.	99-Multi-Discip
(23-703 320-00-00)	(23-704 502-03-51)	

NAS 1-11707 Old Dominion University 3507
Research in physical and life sciences

<i>Period</i>	<i>Obligations</i>	
07/24/72-08/31/75	FY75: \$283,274	TOTAL: \$1,082,534
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ousterhout, D. S.	LARC/Martin, D. J.	49-Engr, NEC
(23-680 176-53-32)	(23-680 177-55-35)	(23-702 505-06-42)

NAS 1-13820 Old Dominion University 3508
Program to simulate Raman scattering spectra of supercombustion
produced flows

<i>Period</i>	<i>Obligations</i>	
02/26/75-05/14/76	FY75: \$20,494	TOTAL: \$20,494
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bandy, A. R.	LARC/Hillard, M. E., Jr.	13-Physics
	LARC/Hunter, W. W.	
(23-702 505-05-41)		

NAS 9-13410 Old Dominion University 3509
Investigation of zero gravity boiling and condensing in mechanical
refrigeration systems

<i>Period</i>	<i>Obligations</i>	
05/01/73-02/28/75	FY75:	TOTAL: \$15,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Keshock, E. G.	JSC/French, B. O.	46-Mech Engr
(72-970 970-52-00)		

NGL 47-003-008 Old Dominion University 3510
Studies in heterocyclic synthesis

<i>Period</i>	<i>Obligations</i>	
07/05/67-08/31/75	FY75:	TOTAL: \$198,333
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Williams, R. L.	LARC/Johnston, N. J.	12-Chemistry
	LARC/Bell, V. L.	
(23-704 501-21-22)	(23-740 134-00-00)	

NGL 47-003-012 Old Dominion University 3511
Theoretical description of soil-tire interaction under moving wheel
of aircraft

<i>Period</i>	<i>Obligations</i>	
05/15/68-12/31/74	FY75:	TOTAL: \$139,960
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Cheng, R.	LARC/Leland, T. J.	44-Civil Engr
(23-760 126-00-00)		

NGL 47-003-039 Old Dominion University 3512
Analysis of a cold jet on bodies of revolution in a subsonic free
stream

<i>Period</i>	<i>Obligations</i>	
10/30/70-11/30/76	FY75:	TOTAL: \$114,463
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Ousterhout, D. S.	LARC/Gentry, G. L., Jr.	41-Aero Engr
	LARC/Margason, R. J.	
(23-760 721-00-00)		

NGL 47-003-067 Old Dominion University 3513
Interdisciplinary investigation of atmospheric processes and
constituents of the mid-Atlantic coastal region

<i>Period</i>	<i>Obligations</i>	
05/10/72-05/31/77	FY75:	TOTAL: \$300,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kindle, E. C.	HQ-P/Vitale, J. A.	31-Atmos Sci
	WFC/Krieger, R. L.	
(10-371 340-00-00)		

**NASA'S UNIVERSITY PROGRAM
VIRGINIA (Continued)**

NGR 47-003-043 **Old Dominion University** **3514**
Investigation of sources of errors in low density gas structure measurements
Period *Obligations*
09/18/70-11/30/75 FY75: \$59,338 **TOTAL: \$237,726**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Brock, F. J. LARC/Outlaw, R. A. 13-Physics
Cox, J. L. LARC/Melfi, L. T., Jr.
(23-601 645-50-01) (23-980 975-90-95)

NGR 47-003-048 **Old Dominion University** **3515**
Exciton coupling in molecular crystals
Period *Obligations*
03/08/71-01/31/75 FY75: **TOTAL: \$44,394**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ake, R. L. LARC/Phillips, D. H. 13-Physics
(23-704 502-01-03) (23-740 129-00-00)

NGR 47-003-052 **Old Dominion University** **3516**
Graduate research program in aeronautics and air transportation
Period *Obligations*
05/12/71-08/31/76 FY75: \$69,055 **TOTAL: \$429,615**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Roberts, A. S., Jr. LARC/Anderson, A. F. 41-Aero Engr
(23-702 505-90-82) (23-720 112-00-00) (23-765 742-00-00)

NGR 47-003-068 **Old Dominion University** **3517**
Aerosol studies
Period *Obligations*
12/11/72-10/31/75 FY75: \$30,664 **TOTAL: \$102,064**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Harris, F. S., Jr. LARC/Crumbly, K. H. 31-Atmos Sci
Kindle, E. C. LARC/McCormick, M. P.
(23-680 176-91-31) (23-920 989-15-00)

NGR 47-003-077 **Old Dominion University** **3518**
Study of stratospheric gases catalytically reacting on alumina
Period *Obligations*
02/21/73-04/30/74 FY75: **TOTAL: \$7,082**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cox, J. L. LARC/Outlaw, R. A. 13-Physics
(23-980 909-72-47)

NGR 47-003-078 **Old Dominion University** **3519**
Heavy-heavy nuclear reactions
Period *Obligations*
01/30/73-12/21/75 FY75: **TOTAL: \$52,147**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Khandelwal, G. S. LARC/Wilson, J. W. 13-Physics
(23-704 502-21-32)

NGR 47-003-082 **Old Dominion University** **3520**
Optimum geometric configuration of space shuttle materials laboratory
Period *Obligations*
03/16/73-06/30/76 FY75: \$97,634 **TOTAL: \$253,660**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Clay, F. P., Jr. LARC/Melfi, L. T., Jr. 31-Atmos Sci
Heuser, J. E. LARC/Outlaw, R. A.
(23-601 645-50-01) (23-840 185-47-91) (23-840 185-47-92)

NGR 47-003-083 **Old Dominion University** **3521**
Laboratory study of passenger subjective response to ideal and real vehicle vibration environments
Period *Obligations*
05/02/73-08/31/74 FY75: **TOTAL: \$37,990**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kirby, R. H. LARC/Mixson, J. S. 69-Psych, NEC
(23-704 501-29-12)

NGR 47-003-087 **Old Dominion University** **3522**
Theoretical and experimental program to develop active optical pollution sensors
Period *Obligations*
06/22/73-08/31/74 FY75: **TOTAL: \$39,670**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bandy, A. R. LARC/Northam, G.B. 39-Env Sci, NEC
(23-980 975-61-00)

NGT 47-003-028 **Old Dominion University** **3523**
Summer faculty fellowship program in engineering systems design
Period *Obligations*
11/14/69-03/31/76 FY75: \$102,035 **TOTAL: \$563,376**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Goglia, G. L. HQ-P/Carter, C. H. 49-Engr, NEC
(10-371 340-00-00)

NGT 47-003-029 **Old Dominion University** **3524**
Summer faculty fellowship program in research
Period *Obligations*
11/14/69-03/31/76 FY75: \$85,734 **TOTAL: \$643,214**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Goglia, G. L. HQ-P/Carter, C. H. 49-Engr, NEC
(10-371 340-00-00)

NSG 1022 **Old Dominion University** **3525**
X-ray emission from high temperature plasmas
Period *Obligations*
05/01/74-06/30/76 FY75: \$12,000 **TOTAL: \$24,000**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Harries, W. L. LARC/Hohl, F. 13-Physics
(23-704 502-10-01)

NSG 1028 **Old Dominion University** **3526**
Collection, reduction and interpretation of neutral thermospheric and exospheric measurements
Period *Obligations*
04/01/74-04/01/76 FY75: **TOTAL: \$64,948**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Goglia, G. L. LARC/Keating, G. M. 31-Atmos Sci
Hinson, E. LARC/Prior, E. J.
(23-840 185-47-91) (23-850 385-36-00)

NSG 1038 **Old Dominion University** **3527**
Finite element methods in low-speed aerodynamics
Period *Obligations*
09/01/74-05/31/75 FY75: **TOTAL: \$22,500**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Baker, A. J. LARC/Morgan, H. L., Jr. 41-Aero Engr
Roberts, A. S., Jr. LARC/Paulson, J. W., Jr.
(23-702 760-62-01) (23-704 501-06-01)

NASA'S UNIVERSITY PROGRAM
VIRGINIA (Continued)

NSG 1039 **Old Dominion University** **3528**
High temperature wideband pressure transducer
Period *Obligations*
09/01/74-08/31/76 **FY75:** **TOTAL: \$34,450**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Zuckerwar, A. J. LARC/Holmes, H. K. 49-Engr, NEC
LARC/Mixson, J. S.
(23-704 501-00-00)

NSG 1040 **Old Dominion University** **3529**
Computer simulation of plasma and n-body problems
Period *Obligations*
06/01/74-02/29/76 **FY75: \$15,000** **TOTAL: \$34,872**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Harries, W. L. LARC/Hohl, F. 19-Phys Sci, NEC
(23-704 502-10-01)

NSG 1041 **Old Dominion University** **3530**
Sensitivity analysis of the remote gas filter correlation analyzer
Period *Obligations*
05/15/74-07/18/75 **FY75:** **TOTAL: \$24,880**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Becher, J. LARC/Orr, H. D. 39-Env Sci, NEC
LARC/Reichle, H. G., Jr.
(23-680 642-12-00)

NSG 1042 **Old Dominion University** **3531**
Development of ride comfort criteria for mass transit systems
Period *Obligations*
05/01/74-04/30/76 **FY75: \$49,997** **TOTAL: \$94,997**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kirby, R. H. LARC/Leatherwood, J. D. 69-Psych, NEC
Mikula, P. J. LARC/Dempsey, T. K. (23-704 504-09-02)
(23-704 504-09-21)

NSG 1043 **Old Dominion University** **3532**
Students summer research studies at Langley
Period *Obligations*
06/01/74-05/31/75 **FY75:** **TOTAL: \$22,127**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Thornton, E. A. LARC/Davis, J. G., Jr. 49-Engr, NEC
Murray, K. H. LARC/Pride, R. A.
(23-704 502-32-01)

NSG 1055 **Old Dominion University** **3533**
Dosimeter for distributed body organs
Period *Obligations*
06/01/74-07/31/76 **FY75:** **TOTAL: \$29,804**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Khandelwal, G. S. LARC/Wilson, J. W. 19-Phys Sci, NEC
(23-704 501-08-10)

NSG 1060 **Old Dominion University** **3534**
Active optical pollution sensors development
Period *Obligations*
06/01/74-09/30/76 **FY75:** **TOTAL: \$83,867**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kindle, E. C. LARC/Remsberg, E. E. 31-Atmos Sci
Blais, R. N. LARC/Northam, G. B. (23-980 975-61-00)
(23-601 645-20-01)

NSG 1065 **Old Dominion University** **3535**
Numerical solution of viscous shock-layer equations for laminar, transitional, and turbulent flows of a radiating gas mixture in chemical equilibrium
Period *Obligations*
06/10/74-06/09/75 **FY75:** **TOTAL: \$35,429**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Goglia, G. L. LARC/Walberg, G. D. 41-Aero Engr
Anderson, E. C. LARC/Olstad, W. B.
(23-704 502-27-01)

NSG 1079 **Old Dominion University** **3536**
Optimal wind tunnel control
Period *Obligations*
09/01/74-10/31/75 **FY75: \$33,200** **TOTAL: \$33,200**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tcheng, P. L. LARC/Tripp, J. S. 45-Elec Engr
(23-702 760-63-03) (23-702 505-06-42) (23-702 745-77-01)

NSG 1087 **Old Dominion University** **3537**
Turbulence closure modeling for high Mach number turbulent shear flows
Period *Obligations*
08/01/74-07/31/76 **FY75: \$29,060** **TOTAL: \$29,060**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Goglia, G. L. LARC/Harris, J. E. 41-Aero Engr
Oh, Y. H. LARC/Bushnell, D. M.
(23-702 505-06-15)

NSG 1090 **Old Dominion University** **3538**
Investigation of aerosol characteristics & their measurement
Period *Obligations*
08/15/74-08/14/75 **FY75: \$34,940** **TOTAL: \$34,940**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Deepak, A. LERC/McCormick, M. P. 31-Atmos Sci
Becher, J. LERC/Robinson, D. M.
Kindle, E. C.
(23-680 176-11-31)

NSG 1092 **Old Dominion University** **3539**
Methodological factors in performance assessments of time-varying aircraft noise effects
Period *Obligations*
08/01/74-09/30/75 **FY75: \$19,840** **TOTAL: \$19,840**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Alluisi, E. A. LARC/Shepherd, W. T. 69-Psych, NEC
Adkins, C. J. LARC/Gunn, W. J.
Coates, G. D.
(23-704 504-09-11)

NSG 1093 **Old Dominion University** **3540**
Thermal-structural analysis of scramjet structures
Period *Obligations*
08/01/74-10/31/77 **FY75: \$61,862** **TOTAL: \$61,862**
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Thornton, E. A. LARC/Wieting, A. R. 47-Materials Engr
Berger, P. E. LARC/Roderick, G. L.
Lowe, H. E., Jr.
(23-702 505-02-31) (23-702 743-01-13)

**NASA'S UNIVERSITY PROGRAM
VIRGINIA (Continued)**

NSG 1094	Old Dominion University	3541			
A general algorithm using finite element methods for aerodynamic configurations in incompressible flows					
<i>Period</i>		<i>Obligations</i>			
08/26/74-08/25/75	FY75: \$18,253	TOTAL: \$18,253			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Goglia, G. L.	LERC/Harris, J. E.	41-Aero Engr			
Balasubramanian, R.	LERC/Rudy, D. H.				
(23-702 505-06-11)					
NSG 1098	Old Dominion University	3542			
Investigation of nozzle afterbody viscous interaction effects by finite element methods					
<i>Period</i>		<i>Obligations</i>			
09/09/74-06/30/76	FY75: \$14,995	TOTAL: \$14,995			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Cooke, C. H.	LARC/Harris, J. E.	41-Aero Engr			
	LARC/Rudy, D. H.				
(23-702 505-06-11)					
NSG 1100	Old Dominion University	3543			
Study of compliant wall drag reduction turbulent boundary layer and a compliant surface					
<i>Period</i>		<i>Obligations</i>			
09/09/74-09/08/76	FY75: \$15,935	TOTAL: \$15,935			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Ash, R. L.	LARC/Hefner, J. N.	41-Aero Engr			
(23-702 760-64-60)					
NSG 1108	Old Dominion University	3544			
Study of satellite remote measurements of stratospheric aerosol and gas parameters using solar occultation technique					
<i>Period</i>		<i>Obligations</i>			
09/15/74-09/14/75	FY75: \$43,440	TOTAL: \$43,440			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Chu, W. P.	LARC/McCormick, M. P.	31-Atmos Sci			
Becher, J.	LARC/Goad, J. H., Jr.				
(23-680 642-12-00)					
NSG 1117	Old Dominion University	3545			
Addition of higher order plate and shell elements into the NASTRAN program					
<i>Period</i>		<i>Obligations</i>			
10/04/74-10/03/75	FY75: \$21,224	TOTAL: \$21,224			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Narayanaswami, R.	LARC/Weidman, D. J.	44-Civil Engr			
Goglia, G. L.	LARC/Walz, J. E.				
(23-704 502-32-01)					
NSG 1127	Old Dominion University	3546			
Parameterization of gaseous constituencies concentration profiles in the planetary boundary layers					
<i>Period</i>		<i>Obligations</i>			
12/09/74-02/08/76	FY75: \$57,976	TOTAL: \$57,976			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Kindle, E. C.	LARC/Reichle, H. G., Jr.	31-Atmos Sci			
	LARC/Beck, S. M.				
(23-601 645-20-01)	(23-601 645-50-01)				
NSG 1131	Old Dominion University	3547			
Remote measurements of atmospheric trace constituents					
<i>Period</i>		<i>Obligations</i>			
01/01/75-01/31/76	FY75: \$26,822	TOTAL: \$26,822			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Kindle, E. C.	LARC/Russell, J. M., III	31-Atmos Sci			
Twitty, J.	MSFC/Kurtz, R. L.				
(23-680 176-21-31)					
NSG 1135	Old Dominion University	3548			
Wind tunnel studies and technical evaluation of advanced cargo aircraft concepts					
<i>Period</i>		<i>Obligations</i>			
01/15/75-01/14/76	FY75: \$38,656	TOTAL: \$38,656			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Goglia, G. L.	LARC/Henderson, W. P.	41-Aero Engr			
Rao, D. M.	LARC/Whitehead, A. H., Jr.				
(23-702 760-64-60)					
NSG 1143	Old Dominion University	3549			
Sensor for measuring instantaneous angle of attack of helicopter blades					
<i>Period</i>		<i>Obligations</i>			
01/13/75-01/12/76	FY75: \$29,552	TOTAL: \$29,552			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Barna, P. S.	LARC/Kershner, D. D.	41-Aero Engr			
	LARC/Feller, C. E.				
(23-702 505-10-35)					
NSG 1144	Old Dominion University	3550			
Analytical simulation of the far-field jet noise and the unsteady jet flow-field by a model of periodic shedding of vortex rings from the jet exit					
<i>Period</i>		<i>Obligations</i>			
03/01/75-08/31/75	FY75: \$13,041	TOTAL: \$13,041			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Goglia, G. L.	LARC/Maestrello, L.	21-Mathematics			
Liu, C. H.					
(23-702 505-03-12)					
NSG 1152	Old Dominion University	3551			
The Earth/Moon system: dynamics and parameter estimation					
<i>Period</i>		<i>Obligations</i>			
02/17/75-10/16/76	FY75: \$52,138	TOTAL: \$52,138			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Breedlove, W. J., Jr.	LARC/Tolson, R. H.	19-Phys Sci, NEC			
(23-810 383-24-03)	(23-910 914-49-00)				
NSG 1153	Old Dominion University	3552			
Radiative transfer models for nonhomogeneous atmosphere					
<i>Period</i>		<i>Obligations</i>			
03/01/75-02/29/76	FY75: \$24,975	TOTAL: \$24,975			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Tiwari, S. N.	LARC/Reichle, H. G., Jr.	31-Atmos Sci			
	LARC/Beck, S. W.				
(23-680 176-21-31)					
NSG 1167	Old Dominion University	3553			
The structural behavior of advanced composite materials					
<i>Period</i>		<i>Obligations</i>			
06/01/75-05/31/78	FY75: \$54,000	TOTAL: \$54,000			
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>			
Hyer, M. W.	LARC/Davis, J. G., Jr.	41-Aero Engr			
	LARC/Pride, R. A.				
(23-702 505-02-41)	(23-704 506-17-11)				

**NASA'S UNIVERSITY PROGRAM
VIRGINIA (Continued)**

NSG 1172 Old Dominion University 3554
Investigation of current university research concerning energy conversion and conservation in small single-family dwellings

<i>Period</i>	<i>Obligations</i>	
04/07/75-09/30/75	FY75: \$5,000	TOTAL: \$5,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Crossman, G. R.	LARC/Marushi, C. B.	49-Engr, NEC
Roberts, A. S., Jr.	LARC/Kirby, C. E.	

(23-250 141-95-01)

NSG 1177 Old Dominion University 3555
Experimental and analytical studies in fluidics

<i>Period</i>	<i>Obligations</i>	
05/01/75-06/30/76	FY75: \$10,000	TOTAL: \$10,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Goglia, G. L.	LARC/Hellbaum, R. F.	45-Elec Engr
McDermon, J. N.		

(23-702 505-07-23)

NSG 1186 Old Dominion University 3556
Space technology research planning study

<i>Period</i>	<i>Obligations</i>	
05/05/75-12/31/75	FY75: \$147,675	TOTAL: \$147,675
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Goglia, G. L.	LARC/Tynan, C. I., Jr.	99-Multi-Discip
	LARC/Osborne, R. S.	

(23-704 750-01-10)

NSG 1197 Old Dominion University 3557
Development of high pressure gas lasers and heterodyne detector systems in the 8 to 11 micron spectral region

<i>Period</i>	<i>Obligations</i>	
06/01/75-05/31/76	FY75: \$37,307	TOTAL: \$37,307
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kindle, E. C.	LARC/Allario, F.	31-Atmos Sci
Copeland, G. E.	LARC/Hess, R. V.	
Thompson, R. T.		

(23-704 506-18-12) (23-704 506-25-55)

NSG 1207 Old Dominion University 3558
Collection, reduction and interpretation of the neutral thermospheric and exospheric measurements

<i>Period</i>	<i>Obligations</i>	
06/09/75-06/08/76	FY75: \$111,351	TOTAL: \$111,351
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Goglia, G. L.	LARC/Keating, G.M.	19-Phys Sci, NEC
	LARC/Lee, R. B., III	

(23-850 863-11-00)

NSG 5053 Old Dominion University 3559
Radiation investigations of optical and electronic components used in astronomical satellite studies

<i>Period</i>	<i>Obligations</i>	
02/17/75-02/16/76	FY75: \$59,979	TOTAL: \$59,979
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Becher, J.	GSFC/Kelsall, T. N.	19-Phys Sci, NEC
Kernell, R. L.	GSFC/Fowler, W. B.	
Clay, F. P., Jr.		

(51-850 868-11-00) (51-850 893-78-56)

NSG 6002 Old Dominion University 3560
Design, construction and testing of a rhodamine-B ozone sonde

<i>Period</i>	<i>Obligations</i>	
01/22/75-10/21/75	FY75: \$6,652	TOTAL: \$6,652
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bandy, A. R.	WFC/Spurling, J. R.	31-Atmos Sci

(53-680 175-61-61)

NAS 1-10210 University of Virginia 3561
Master agreement for research and development in the physical, life sciences and engineering

<i>Period</i>	<i>Obligations</i>	
07/24/70-01/30/75	FY75: \$3,000	TOTAL: \$167,581
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
White, E. J.	LARC/Kelly, W. L.	45-Elec Engr

(23-840 185-47-91) (23-850 863-11-00) (23-702 768-81-01)

NAS 1-12754 University of Virginia 3562
Research in the physical and life sciences

<i>Period</i>	<i>Obligations</i>	
10/26/73-05/04/76	FY75:	TOTAL: \$99,982
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Barnes, D. W.	LARC/Martin, D. J.	99-Multi-Discip

(23-702 513-52-01) (23-704 506-16-36) (23-704 506-18-21)

NAS 5-20065 University of Virginia 3563
Performance limits of the astrometric multiplexing area scanner for the large space telescope

<i>Period</i>	<i>Obligations</i>	
02/04/74-03/25/75	FY75:	TOTAL: \$10,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Frederick, L. W.	GSFC/Kelsall, T. N.	11-Astronomy
	GSFC/Sobieski, S.	

(51-850 188-78-56)

NAS 5-20999 University of Virginia 3564
Analysis of data for ERTS follow-on investigation

<i>Period</i>	<i>Obligations</i>	
04/03/75-10/03/76	FY75: \$41,000	TOTAL: \$41,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Dolan, R.	GSFC/Crump, E. W.	39-Env Sci, NEC

(51-680 641-15-00)

NAS 5-22346 University of Virginia 3565
Design and application of a one meter UV-optical telescope for spacelab astronomy missions

<i>Period</i>	<i>Obligations</i>	
04/29/75-12/31/75	FY75: \$2,576	TOTAL: \$2,576
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Oconnell, R. W.	GSFC/Leckrone, D. S.	11-Astronomy

(51-850 356-41-01)

NCA 2-25501 University of Virginia 3566
Animal models and instrumentation for quantitative effects of space sickness

<i>Period</i>	<i>Obligations</i>	
05/01/75-06/30/76	FY75: \$13,200	TOTAL: \$13,200
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Udpike, O. L.	ARC/Zill, L. P.	52-Clinical Med

(21-970 970-21-45)

**NASA'S UNIVERSITY PROGRAM
VIRGINIA (Continued)**

NGR 47-005-219 **University of Virginia** **3579**
 Unsteady loads due to propulsive lift configurations
Period *Obligations*
 01/01/74-02/27/76 FY75: \$39,890 TOTAL: \$79,806
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Haviland, J. K. LARC/Schoenster, J. A. 41-Aero Engr
 Morton, J. B. LARC/Mixson, J. S.
 (23-702 505-10-41)

NSG 1010 **University of Virginia** **3580**
 Superconducting magnetic suspension and balance experiment
Period *Obligations*
 03/01/74-09/30/76 FY75: \$160,000 TOTAL: \$202,700
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Zapata, R. N. LARC/Kilgore, R. A. 41-Aero Engr
 LARC/Boydson, R. P.
 (23-702 505-06-42) (23-704 501-06-09)

NSG 1067 **University of Virginia** **3581**
 Investigation of processor architectures utilizing magnetic bubble and semiconductor memories
Period *Obligations*
 07/01/74-06/30/75 FY75: \$5,000 TOTAL: \$37,646
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Parrish, E. A., Jr. LARC/Wells, J. G., Jr. 45-Elec Engr
 McVey, E. S. LARC/Husson, C.
 (23-704 502-03-52)

NSG 1101 **University of Virginia** **3582**
 Optimization and sensitivity studies of flight-path trajectories
Period *Obligations*
 09/16/74-09/15/75 FY75: \$29,937 TOTAL: \$29,937
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Cook, G. LARC/Hueschen, R. M. 49-Engr, NEC
 LARC/Walsh, T. M.
 (23-702 513-52-01)

NSG 1128 **University of Virginia** **3583**
 Optimization of MLS receivers for multipath environments
Period *Obligations*
 12/16/74-08/31/75 FY75: \$29,967 TOTAL: \$29,967
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 McAlpine, G. A. LARC/Shultz, L. R. 45-Elec Engr
 LARC/Walsh, T. M.
 (23-702 513-52-01)

NSG 1151 **University of Virginia** **3584**
 Investigation of optimal discrete approximations for real-time flight simulations
Period *Obligations*
 03/01/75-02/28/76 FY75: \$50,000 TOTAL: \$50,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Parrish, E. A., Jr. LARC/Barker, L. E. 21-Mathematics
 McVey, E. S. LARC/Bowles, R. L.
 Cook, G.
 (23-704 504-09-41)

NSG 1180 **University of Virginia** **3585**
 Study of interior aircraft cabin noise
Period *Obligations*
 05/19/75-05/18/76 FY75: \$48,259 TOTAL: \$48,259
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Jacobson, I. D. LARC/Leatherwood, J. D. 41-Aero Engr
 (23-704 504-09-21)

NGL 47-002-005 **Virginia Commonwealth University** **3586**
 Radiation hazards to the eye
Period *Obligations*
 06/25/65-04/30/77 FY75: TOTAL: \$488,317
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Ham, W. T. HQ-MM/Saunders, J. F. 51-Biology
 HQ-MM/Jones, W. L.
 (10-371 340-00-00)

NGL 47-002-020 **Virginia Commonwealth University** **3587**
 Microbiological performance testing on water management subsystem for a four man space capsule
Period *Obligations*
 04/23/68-05/31/76 FY75: TOTAL: \$252,162
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Dalton, H. P. LARC/Wilkins, J. R. 51-Biology
 (23-770 127-00-00) (23-970 970-32-00)

NGR 47-002-041 **Virginia Commonwealth University** **3588**
 Isomer effects on polyimide properties
Period *Obligations*
 10/11/72-06/30/76 FY75: \$21,180 TOTAL: \$51,355
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Stump, B. L. LARC/Bell, V. L. 12-Chemistry
 LARC/Johnston, N. J.
 (23-702 505-01-34) (23-704 501-21-22) (23-705 118-00-00)

NGR 47-018-005 **Virginia Military Institute** **3589**
 Digital adaptive control of a VTOL aircraft
Period *Obligations*
 11/01/73-02/28/76 FY75: \$9,733 TOTAL: \$20,661
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Reid, G. F. LARC/Creedon, J. F. 41-Aero Engr
 (23-702 505-07-41)

NAS 1-10646 **Virginia Polytechnic Institute** **3590**
 Research and development in the life sciences, physical sciences, and engineering
Period *Obligations*
 02/12/71-05/31/75 FY75: \$2,783 TOTAL: \$363,957
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Wightman, J. P. LARC/Byvik, C. E. 31-Atmos Sci
 (23-704 501-21-22) (23-704 501-22-04)

NAS 1-13175 **Virginia Polytechnic Institute** **3591**
 Research in the physical and life sciences
Period *Obligations*
 05/10/74-05/10/76 FY75: \$158,018 TOTAL: \$199,910
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Robertson, R. M. LARC/Martin, D. J. 49-Engr, NEC
 (23-680 175-21-32) (23-680 638-10-00) (23-702 505-01-34)

NAS 1-13884 **Virginia Polytechnic Institute** **3592**
 Study of theory of acoustical propagation through a high subsonic Mach number duct constriction
Period *Obligations*
 04/25/75-04/25/77 FY75: \$93,660 TOTAL: \$93,660
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Nayfeh, A. H. LARC/Posey, J. W. 13-Physics
 (23-702 505-03-12)

**NASA'S UNIVERSITY PROGRAM
VIRGINIA (Continued)**

NAS 3-18553 Virginia Polytechnic Institute 3593
Basic research in advanced acoustic suppression concepts

<i>Period</i>	<i>Obligations</i>	
08/07/74-10/06/75	FY75: \$56,865	TOTAL: \$56,865
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Robertson, R. A.	LERC/Baumeister, K. J.	49-Engr, NEC
(22-704 501-24-01)		

NGR 47-004-090 Virginia Polytechnic Institute 3600
Research program in aeronautics & air transportation systems

<i>Period</i>	<i>Obligations</i>	
06/25/71-06/30/76	FY75: \$100,000	TOTAL: \$389,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Fabrycky, W. J.	LARC/Anderson, A. F.	41-Aero Engr
(23-702 505-90-82)	(23-760 126-00-00)	(23-760 136-00-00)

NAS 5-21984 Virginia Polytechnic Institute 3594
Study of the ATS-F millimeter wave experiment

<i>Period</i>	<i>Obligations</i>	
01/31/74-09/01/75	FY75:	TOTAL: \$174,447
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bostian, C. W.	GSFC/Hirschmann, E.	45-Elec Engr
Stutzman, W. L.		
Wiley, P. H.		
(51-620 643-10-00)		

NGR 47-004-091 Virginia Polytechnic Institute 3601
Influence of polarization on millimeter wave propagation through rain

<i>Period</i>	<i>Obligations</i>	
01/01/72-03/31/74	FY75:	TOTAL: \$73,648
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Bostian, C. W.	GSFC/Hirschmann, E.	45-Elec Engr
Stutzman, W. L.		
(51-620 355-00-00)	(51-620 164-21-72)	

NAS 6-1863 Virginia Polytechnic Institute 3595
Remote sensing in agriculture

<i>Period</i>	<i>Obligations</i>	
07/14/70-07/13/73	FY75:	TOTAL: \$73,422
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Petry, D. E.	WFC/Bettle, J. F.	39-Env Sci, NEC
Hutcheson, T. B.	WFC/Scott, J. H.	
(53-680 160-75-01)		

NGR 47-004-098 Virginia Polytechnic Institute 3602
The stability of motion of satellites with long flexible appendages

<i>Period</i>	<i>Obligations</i>	
05/01/72-02/28/74	FY75:	TOTAL: \$35,525
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Meirovitch, L.	GSFC/Fedor, J. V.	42-Astro Engr
(51-620 630-00-00)		

NAS 6-2388 Virginia Polytechnic Institute 3596
Remote sensing in agriculture

<i>Period</i>	<i>Obligations</i>	
11/01/73-10/31/76	FY75: \$32,500	TOTAL: \$71,410
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Petry, D. E.	WFC/Scott, J. H.	39-Env Sci, NEC
(53-601 644-02-02)	(53-680 177-56-61)	

NGR 47-004-100 Virginia Polytechnic Institute 3603
The stability of motion of satellites with cavities partially filled with liquid

<i>Period</i>	<i>Obligations</i>	
08/01/72-04/30/75	FY75:	TOTAL: \$49,870
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Meirovitch, L.	GSFC/Hrastar, J. A.	49-Engr, NEC
(51-850 868-11-00)		

NAS 9-12630 Virginia Polytechnic Institute 3597
Viscous shock-layer method to predict surface pressure and heat transfer to distributions over two-dimensional nonanalytic shapes

<i>Period</i>	<i>Obligations</i>	
04/17/72-12/31/75	FY75:	TOTAL: \$119,242
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lewis, C. H.	JSC/Curry, D. M.	41-Aero Engr
(72-920 986-15-00)	(72-920 986-00-00)	

NGR 47-004-106 Virginia Polytechnic Institute 3604
Optimization of skin friction reduction in supersonic flow by fluid injection

<i>Period</i>	<i>Obligations</i>	
05/01/73-06/30/74	FY75:	TOTAL: \$45,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Schetz, J. A.	LARC/Beckwith, I. E.	41-Aero Engr
Lewis, C. H.		
(23-701 599-85-00)		

NGL 47-004-067 Virginia Polytechnic Institute 3598
Measurement of the ground wind structure

<i>Period</i>	<i>Obligations</i>	
06/15/70-06/30/76	FY75: \$48,000	TOTAL: \$353,000
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Tieleman, H. W.	WFC/West, W. H.	31-Atmos Sci
(53-702 505-08-10)	(53-704 501-08-10)	

NGR 47-004-108 Virginia Polytechnic Institute 3605
Correlation of creep rate with microstructural changes during high temperature creep

<i>Period</i>	<i>Obligations</i>	
06/08/72-06/30/75	FY75:	TOTAL: \$76,358
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Lytton, J. L.	LARC/Stein, B. A.	47-Materials Engr
Young, C. T.		
(23-704 502-37-02)		

NGL 47-004-080 Virginia Polytechnic Institute 3599
Synthesis, energetics, and chemical characterization of unusual molecules of interest in astronomy at temperatures below 100 K

<i>Period</i>	<i>Obligations</i>	
04/19/71-06/30/76	FY75:	TOTAL: \$61,960
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
McGee, H. A.	HQ-SL/Fellows, R. F.	11-Astronomy
(10-840 185-00-00)		

NGR 47-004-114 Virginia Polytechnic Institute 3606
Crash safety of general aviation aircraft

<i>Period</i>	<i>Obligations</i>	
09/19/72-12/31/75	FY75: \$21,431	TOTAL: \$132,885
<i>Prin. Invest.</i>	<i>NASA Tech. Officer</i>	<i>CASE Category</i>
Kamat, M. P.	LARC/Hayduk, R. J.	44-Civil Engr
Swift, G. W.	LARC/Thomson, R. G.	
(23-702 505-02-13)	(23-702 760-60-01)	

NASA'S UNIVERSITY PROGRAM
VIRGINIA (Continued)

NGR 47-004-116 Virginia Polytechnic Institute **3607**
 Investigation of digital flight control systems
Period *Obligations*
 01/11/73-12/31/76 FY75: \$24,621 TOTAL: \$51,769
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Caglayan, A. K. LARC/Montgomery, R. C. 41-Aero Engr
 Vanlandingham, H. F.
 (23-702 512-51-02)

NGR 47-004-126 Virginia Polytechnic Institute **3608**
 Spin stabilization of flexible satellites about nontrivial equilibrium positions
Period *Obligations*
 04/15/74-07/31/75 FY75: TOTAL: \$24,960
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Meirovitch, L. GSFC/Fedor, J. V. 11-Astronomy
 (51-830 492-04-15)

NGR 47-004-129 Virginia Polytechnic Institute **3609**
 Composite materials research and education
Period *Obligations*
 01/01/74-12/31/75 FY75: \$43,436 TOTAL: \$56,036
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Herakovich, C. T. LARC/Davis, J. G., Jr. 49-Engr, NEC
 LARC/Dexter, H. B.
 (23-704 501-22-03) (23-702 505-02-41)

NSG 1015 Virginia Polytechnic Institute **3610**
 Redundancy in self reorganizing system: A geometric formulation
Period *Obligations*
 03/06/74-10/15/75 FY75: TOTAL: \$22,435
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Cliff, E. M. LARC/Montgomery, R. C. 41-Aero Engr
 (23-702 766-75-02)

NSG 1020 Virginia Polytechnic Institute **3611**
 Determining ion kinetic energies by a method of mass spectrometer peak-shape variation
Period *Obligations*
 07/01/74-08/31/75 FY75: TOTAL: \$10,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Sanzone, G. LARC/Yeager, P. R. 13-Physics
 LARC/Smith, A.
 (23-630 161-00-00)

NSG 1024 Virginia Polytechnic Institute **3612**
 Photoelastic determination of stress intensity factors for cracks emanating from fastener loaded holes
Period *Obligations*
 09/15/74-09/14/76 FY75: \$25,403 TOTAL: \$48,828
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Smith, C. W. LARC/Newman, J. C., Jr. 41-Aero Engr
 LARC/Crews, J. H., Jr.
 (23-702 505-02-31)

NSG 1064 Virginia Polytechnic Institute **3613**
 Synthesis and polymerization of aromatic secondary diamines
Period *Obligations*
 06/01/74-05/31/76 FY75: \$18,850 TOTAL: \$32,870
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Wolfe, J. F. LARC/Johnston, N. J. 12-Chemistry
 LARC/Bell, V. L.
 (23-702 505-01-34)

NSG 1071 Virginia Polytechnic Institute **3614**
 Statistical studies in the advanced technology laboratory program
Period *Obligations*
 07/01/74-12/15/75 FY75: TOTAL: \$35,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Hinkelmann, K. LARC/Campbell, J. W. 21-Mathematics
 Myers, R. H.
 (23-680 176-14-31)

NSG 1085 Virginia Polytechnic Institute **3615**
 Kinetics of the reactions of acid anhydrides with aromatic amines in aprotic solvents
Period *Obligations*
 07/01/74-06/30/76 FY75: \$26,453 TOTAL: \$49,593
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Mason, J. G. LARC/Young, P. R. 12-Chemistry
 LARC/Johnston, N. J.
 (23-702 505-01-34)

NSG 1099 Virginia Polytechnic Institute **3616**
 Statistical distribution of time - to - crack initiation using service data
Period *Obligations*
 09/16/74-09/14/76 FY75: \$41,000 TOTAL: \$41,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Heller, R. A. LARC/Davidson, J. R. 41-Aero Engr
 Yang, J. N. LARC/Leybold, H. A.
 (23-702 505-02-31)

NSG 1109 Virginia Polytechnic Institute **3617**
 Stability and control of flexible spacecraft
Period *Obligations*
 10/01/74-12/31/75 FY75: \$34,165 TOTAL: \$34,165
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Meirovitch, L. LARC/Kruszewski, E. T. 44-Civil Engr
 Van Landingham, H. F.
 (23-704 506-17-11)

NSG 1114 Virginia Polytechnic Institute **3618**
 Structural dynamics, stability and control of helicopters
Period *Obligations*
 10/08/74-10/30/75 FY75: \$34,760 TOTAL: \$34,760
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Meirovitch, L. LARC/Kvaternik, R. G. 41-Aero Engr
 (23-702 505-10-26)

NSG 1119 Virginia Polytechnic Institute **3619**
 Analyze solid-rocket effluents for aluminum, silicon and other trace elements by neutron activation analysis
Period *Obligations*
 10/24/74-10/31/75 FY75: \$2,000 TOTAL: \$2,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Furr, A. K. LARC/Sentell, R. J. 13-Physics
 (23-704 506-21-68)

NSG 1124 Virginia Polytechnic Institute **3620**
 Effect of adhered surfaces on adhesion
Period *Obligations*
 12/01/74-11/30/75 FY75: \$36,805 TOTAL: \$36,805
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Wightman, J. P. LARC/Progar, D. J. 12-Chemistry
 LARC/Bell, V. L.
 (23-702 505-01-34)

**NASA'S UNIVERSITY PROGRAM
VIRGINIA (Continued)**

NSG 1132 Virginia Polytechnic Institute **3621**
Microprocessor operation and evaluation
Period *Obligations*
12/01/74-11/30/75 FY75: \$6,050 TOTAL: \$6,050
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bennett, W. E., III LARC/Cuddihy, D. G. 45-Elec Engr
(23-030 997-00-00)

NSG 1182 Virginia Polytechnic Institute **3622**
Statistical study of ozone in the atmosphere
Period *Obligations*
07/01/75-06/30/76 FY75: \$19,765 TOTAL: \$19,765
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Myers, R. H. LARC/Campbell, J. W. 31-Atmos Sci
(23-704 506-26-30)

NSG 1195 Virginia Polytechnic Institute **3623**
Interaction of hydrogen chloride with alumina
Period *Obligations*
06/01/75-08/31/76 FY75: \$16,625 TOTAL: \$16,625
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wightman, J. P. LARC/Pellett, G. L. 12-Chemistry
(23-704 506-21-30)

NSG 1214 Virginia Polytechnic Institute **3624**
Fiber reinforcement and surface protection of selected titanium alloys
Period *Obligations*
07/01/75-06/30/76 FY75: \$42,882 TOTAL: \$42,882
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Houska, C. R. LARC/Tenney, D. R. 47-Materials Engr
LARC/Tompkins, S. S.
(23-704 502-37-02) (23-704 506-16-21)

NSG 2016 Virginia Polytechnic Institute **3625**
Aeroelastic phenomena associated with oblique winged aircraft
Period *Obligations*
04/01/74-03/31/76 FY75: \$23,328 TOTAL: \$46,501
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Weisshaar, T. A. ARC/Gaspers, P. A., Jr. 41-Aero Engr
(21-702 505-02-21) (21-702 760-64-01) (21-704 501-22-05)

NSG 2038 Virginia Polytechnic Institute **3626**
Fundamental investigation of failure of fiber composites
Period *Obligations*
10/01/74-09/30/75 FY75: \$91,943 TOTAL: \$91,943
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Brinson, H. F. ARC/Williams, D. P. 47-Materials Engr
Kanninen, M. F. ARC/Sumsion, H. T.
Rubicki, E. F.
(21-702 505-01-21)

NSG 7111 Virginia Polytechnic Institute **3627**
Review of possible studies of the mineralogy and petrology of Mars and Mercury
Period *Obligations*
01/20/75-10/31/75 FY75: \$3,000 TOTAL: \$3,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Unavailable HQ-SL/Dwornik, S.E. 32-Geological Sci
(10-840 185-50-81)

NGL 47-014-009 Virginia State College **3628**
Numerical treatment of sound propagation through a duct
Period *Obligations*
06/29/73-06/30/77 FY75: \$28,942 TOTAL: \$79,442
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Agrawal, K. M. LARC/Lester, H. C. 41-Aero Engr
(23-371 340-00-00) (10-371 340-00-00)

NGR 47-014-004 Virginia State College **3629**
Analysis of Martian surface, its origin & theory
Period *Obligations*
01/24/72-07/01/75 FY75: \$8,894 TOTAL: \$31,128
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gipson, M., Jr. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Holt, H. E.
(10-840 384-50-80)

NGR 47-014-006 Virginia State College **3630**
Research program in nuclear and solid state physics
Period *Obligations*
06/23/72-08/31/75 FY75: \$27,043 TOTAL: \$69,067
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Stronach, C. E. LARC/Wilson, J. W. 13-Physics
(23-371 340-00-00) (10-371 340-00-00)

NGR 47-014-007 Virginia State College **3631**
Industrial arts curriculum development
Period *Obligations*
01/24/73-09/14/75 FY75: TOTAL: \$41,534
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Van Dyke, A. LARC/Mehrens, H. E. 49-Engr, NEC
LARC/Parker, M. H.
(23-371 340-00-00) (23-704 502-21-27) (23-701 599-85-00)

WASHINGTON

NAS 1-9694 University of Washington **3632**
Participation in the science planning for the Viking 1975 missions in the area of meteorology
Period *Obligations*
04/27/70-03/31/77 FY75: \$28,605 TOTAL: \$214,672
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Leovy, C. B. LARC/Williams, T. S., Jr. 31-Atmos Sci
LARC/Glenny, W. R.
(23-840 815-20-00)

NAS 2-8541 University of Washington **3633**
Conduct 50 bone assays and 200 serum PTH assays
Period *Obligations*
08/01/74-12/31/75 FY75: \$11,000 TOTAL: \$11,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Baylink, D. J. ARC/Holton, E. M. 53-Other Medical
ARC/Sandler, H.
(21-970 970-21-61)

**NASA'S UNIVERSITY PROGRAM
WASHINGTON (Continued)**

NGR 48-002-141 University of Washington 3648
 Research program in aeronautics & air transportation
Period *Obligations*
 05/10/72-12/31/75 FY75: TOTAL: \$130,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Kippenhan, C. J. ARC/Watson, E. C. 41-Aero Engr
 ARC/Anderson, A. E.
 (21-760 136-00-00)

NGR 48-002-142 University of Washington 3649
 Analysis of continuum channel light curves
Period *Obligations*
 10/03/72-12/31/75 FY75: \$24,671 TOTAL: \$74,299
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Jin, R. S. HQ-SL/Brunk, W. E. 11-Astronomy
 HQ-SL/Fellows, R. F.
 (10-840 196-41-80)

NGR 48-002-149 University of Washington 3650
 Lunar sample analysis
Period *Obligations*
 10/01/72-01/31/76 FY75: \$50,630 TOTAL: \$130,379
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Ghose, S. JSC/Harris, J. W. 13-Physics
 (72-810 388-10-01)

NGR 48-002-153 University of Washington 3651
 Classification and mapping of planetary soils
Period *Obligations*
 02/12/73-10/31/75 FY75: TOTAL: \$3,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Vgolihi, F. C. HQ-SL/Dwornik, S. E. 32-Geological Sci
 (10-840 384-50-80)

NGR 48-002-154 University of Washington 3652
 Study of physical conditions in interplanetary and magnetospheric regions
Period *Obligations*
 08/01/73-07/31/76 FY75: \$22,000 TOTAL: \$44,017
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Parks, G. K. HQ-SG/Berko, F. W. 13-Physics
 HQ-SG/Schmerling, E. R.
 (10-850 188-36-55)

NGR 48-002-162 University of Washington 3653
 Atmospheric studies based on Mariner 9 data
Period *Obligations*
 07/01/73-06/30/74 FY75: TOTAL: \$29,272
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Leovy, C. B. HQ-SL/Fellows, R. F. 31-Atmos Sci
 HQ-SL/Brunk, W. E.
 (10-840 384-47-81)

NGR 48-002-166 University of Washington 3654
 Interstellar lines in the Vela Supernova remnant
Period *Obligations*
 12/01/73-11/30/75 FY75: \$900 TOTAL: \$2,050
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Wallerstein, G. GSFC/Kupperian, J. E. 11-Astronomy
 (51-850 831-42-00)

NSG 5039 University of Washington 3655
 Stratospheric long waves
Period *Obligations*
 12/01/74-11/30/75 FY75: \$30,000 TOTAL: \$30,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Leovy, C. B. GSFC/Theon, J. S. 31-Atmos Sci
 Webster, P. J.
 (51-680 175-61-41)

NSG 7085 University of Washington 3656
 Dynamics of planetary atmospheres
Period *Obligations*
 07/01/74-06/30/76 FY75: \$76,224 TOTAL: \$76,224
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Leovy, C. B. HQ-SL/Fellows, R. F. 31-Atmos Sci
 HQ-SL/Brunk, W. E.
 (10-840 185-47-81)

NAS 8-29725 Washington State University 3657
 Solidification of binary alloys exhibiting solid state immiscibility under zero gravity conditions
Period *Obligations*
 04/17/73-10/31/75 FY75: \$30,000 TOTAL: \$70,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Johnson, A. A. MSFC/Yates, I. C., Jr. 47-Materials Engr
 Anantatmula, R. P. MSFC/Lacy, L. L.
 (62-630 179-11-13)

WEST VIRGINIA

NSG 7089 West Virginia Col. Grad. Studies 3658
 Economic analysis and NASA technology program planning
Period *Obligations*
 08/31/74-09/30/75 FY75: \$23,854 TOTAL: \$23,854
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Cobb, W. E. HQ-RX/Rollins, R. H. 75-Political Sci
 HQ-RX/Mullin, J. P.
 (10-701 791-40-10)

NAS 3-19725 West Virginia University 3659
 Development of a fluidized bed computer model
Period *Obligations*
 06/23/75-06/22/76 FY75: \$73,509 TOTAL: \$73,509
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Wen, C. Y. LERC/Phillips, B. 49-Engr, NEC
 (22-702 770-18-01)

NGL 49-001-019 West Virginia University 3660
 Effect of changing gravity & weightlessness on vasopressin control systems
Period *Obligations*
 06/02/66-02/14/76 FY75: TOTAL: \$135,344
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Moran, W. H. ARC/Danellis, J. V. 52-Clinical Med
 (21-770 127-00-00) (10-770 127-00-00)

**NASA'S UNIVERSITY PROGRAM
WEST VIRGINIA (Continued)**

NGR 49-001-048 West Virginia University **3661**
Weightless analog study of particle deposition in human lung
Period *Obligations*
04/28/70-05/01/75 FY75: TOTAL: \$222,450
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Leovy, C. B. ARC/Harrison, G. A. 52-Clinical Med
(21-970 970-00-00) (21-770 127-00-00)

NGR 49-001-056 West Virginia University **3662**
Analysis of microwave radiometer measurement of a water tank surface
Period *Obligations*
04/20/72-12/31/75 FY75: \$11,140 TOTAL: \$81,713
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Balanis, C. A. LARC/Johnson, J. W. 45-Elec Engr
LARC/Jones, W. L.
(23-630 161-05-07) (23-680 175-31-31)

NGR 49-001-061 West Virginia University **3663**
Technology to improve rural housing, utility system, and water sewerage in West Virginia
Period *Obligations*
05/31/73-12/31/74 FY75: TOTAL: \$18,250
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Steinhardt, E. J. LARC/Kirby, C. E. 39-Env Sci, NEC
(23-250 141-93-02)

WISCONSIN

NGR 50-010-001 Beloit College **3664**
Low spectral resolution studies of large space telescope
Period *Obligations*
10/01/73-02/29/76 FY75: TOTAL: \$5,740
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schroeder, D. J. GSFC/Sobieski, S. 11-Astronomy
GSFC/Meese, K. J.
(51-850 188-78-58)

NSG 1025 Marquette University **3665**
Attitude determination of a high altitude balloon payload system
Period *Obligations*
04/01/74-08/31/75 FY75: TOTAL: \$23,200
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Nigro, N. J. LARC/Hinton, D. E. 21-Mathematics
Elkouh, A. F.
(23-680 176-21-31)

NSG 9017 University of Wisconsin - Green Bay **3666**
Investigation of peripheral blood flow as a thermoregulatory function
Period *Obligations*
09/01/74-08/31/75 FY75: \$20,407 TOTAL: \$20,407
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kaufman, W. C. JSC/Waligora, J. M. 51-Biology
(72-970 970-51-14)

NAS 1-13204 University of Wisconsin - Madison **3667**
Spinning wide-field-of-view radiosity detector study
Period *Obligations*
06/06/74-04/20/75 FY75: TOTAL: \$42,500
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Suomi, V. E. LARC/Smith, G. L. 31-Atmos Sci
Haig, T. O. LARC/Cooper, J. E.
(23-680 175-21-32) (23-680 638-10-00)

NAS 2-7314 University of Wisconsin - Madison **3668**
Environmental factors controlling growth
Period *Obligations*
10/24/72-09/30/75 FY75: \$20,000 TOTAL: \$54,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tibbetts, T. W. ARC/Taketa, S. T. 51-Biology
(21-970 970-21-61)

NAS 2-7882 University of Wisconsin - Madison **3669**
Design and development of a net flux radiometer
Period *Obligations*
10/26/73-05/09/75 FY75: \$130,403 TOTAL: \$229,403
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Suomi, Y. E. ARC/Twarowski, R. J. 31-Atmos Sci
Sromovsky, L. A. ARC/Hall, C. F.
(21-840 186-68-63)

NAS 2-8752 University of Wisconsin - Madison **3670**
Development of a method for determination of vitamin D metabolites in blood
Period *Obligations*
02/01/75-12/31/75 FY75: \$16,000 TOTAL: \$16,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Deluca, H. F. ARC/Holton, E. F. 12-Chemistry
ARC/Danellis, J. V.
(21-970 970-21-61)

NAS 2-8813 University of Wisconsin - Madison **3671**
Design and development of the Pioneer/Venus net flux radiometer
Period *Obligations*
05/10/75-08/31/78 FY75: \$50,000 TOTAL: \$50,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Suomi, V. E. ARC/Hall, C. F. 31-Atmos Sci
Sromovsky, L. A. ARC/Twarowski, R. J.
(21-840 825-20-00)

NAS 5-11361 University of Wisconsin - Madison **3672**
Investigation of cosmic soft X-ray background radiation
Period *Obligations*
12/21/70-08/30/75 FY75: \$178,000 TOTAL: \$2,065,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kraushaar, W. L. GSFC/Donley, J. L. 31-Atmos Sci
(51-850 821-32-00)

NAS 5-20068 University of Wisconsin - Madison **3673**
Thermal honeycomb shield concept
Period *Obligations*
04/25/74-12/18/75 FY75: \$15,000 TOTAL: \$23,975
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dombrowski, R. M. GSFC/Oberright, J. E. 49-Engr, NEC
(51-850 832-12-00) (51-850 878-11-00) (51-840 823-11-00)

**NASA'S UNIVERSITY PROGRAM
WISCONSIN (Continued)**

NAS 5-20973 University of Wisconsin - Madison 3674
Study for application of a sounding rocket experiment to
spacelab/shuttle mission
Period *Obligations*
03/05/75-09/05/75 FY75: \$46,200 TOTAL: \$46,200
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Code, A. D. GSFC/White, A. 11-Astronomy
(51-850 356-64-41)

NAS 5-20974 University of Wisconsin - Madison 3675
Navigation model for ATS satellites
Period *Obligations*
03/18/75-11/18/75 FY75: \$39,790 TOTAL: \$39,790
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Suomi, V. E. GSFC/Squires, R. K. 13-Physics
(51-680 175-51-45)

NAS 5-21798 University of Wisconsin - Madison 3676
Studies of soundings and imaging measurements from geostation-
ary satellites
Period *Obligations*
08/01/72-11/30/75 FY75: \$75,000 TOTAL: \$255,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bottino, M. L. GSFC/Wexler, R. 31-Atmos Sci
(51-680 175-61-41) (51-680 683-73-01)

NAS 5-21965 University of Wisconsin - Madison 3677
Development of an IR temperature sounder for SMS spacecraft
Period *Obligations*
08/01/73-10/31/75 FY75: TOTAL: \$194,024
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Suomi, V. E. GSFC/Moody, J. C. 31-Atmos Sci
Sromovsky, L. A.
(51-680 601-13-00)

NAS 5-22349 University of Wisconsin - Madison 3678
High resolution spectroscopy for a one meter class UV-optical
telescope for spacelab astronomy missions
Period *Obligations*
04/23/75-12/31/75 FY75: \$3,247 TOTAL: \$3,247
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Anderson, C. M. GSFC/Leckrone, D. S. 11-Astronomy
(51-850 356-41-01)

NAS 5-22410 University of Wisconsin - Madison 3679
Reduction and analysis of data from OSO-1 soft X-ray background
experiment
Period *Obligations*
06/26/75-06/25/77 FY75: \$100,000 TOTAL: \$100,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kraushaar, W. L. GSFC/White, R. A. 31-Atmos Sci
(51-850 821-32-00)

NAS 5-23285 University of Wisconsin - Madison 3680
Operation and data handling requirements for large space
telescope
Period *Obligations*
09/07/73-08/31/75 FY75: \$17,200 TOTAL: \$35,723
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bless, R. C. GSFC/Sobieski, S. 11-Astronomy
GSFC/Meese, K. J.
(51-850 893-78-56) (51-850 188-78-58) (51-850 188-78-56)

NAS 5-23296 University of Wisconsin - Madison 3681
Update and improvement of interactive man-computer system
Period *Obligations*
08/13/73-09/30/75 FY75: \$99,912 TOTAL: \$266,266
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Suomi, V. E. GSFC/Greaves, J. R. 31-Atmos Sci
(51-680 611-13-00)

NAS 8-21015 University of Wisconsin - Madison 3682
Development & construction of an X-ray astronomy experiment
Period *Obligations*
09/30/66-12/01/77 FY75: TOTAL: \$1,036,652
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kraushaar, W. L. MSFC/Ponder, T. W. 11-Astronomy
MSFC/Rose, S. D.
(62-960 948-80-81)

NAS 8-28733 University of Wisconsin - Madison 3683
Metals-melting and exothermic brazing
Period *Obligations*
05/25/72-01/01/76 FY75: \$7,080 TOTAL: \$64,080
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Heine, R. W. MSFC/Williams, J. R. 47-Materials Engr
Siewert, T. A. MSFC/Hasemeyer, E. A.
(62-960 948-90-95) (62-960 948-90-00)

NAS 8-29387 University of Wisconsin - Madison 3684
Studies associated with large space telescope working group
Period *Obligations*
07/15/73-06/30/76 FY75: \$2,827 TOTAL: \$3,674
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Code, A. D. MSFC/Odell, C. R. 11-Astronomy
MSFC/Snoddy, W. C.
(62-850 893-78-56) (62-850 188-78-56)

NASW 2716 University of Wisconsin - Madison 3685
Establishment of a biomedical applications team
Period *Obligations*
07/01/74-06/30/75 FY75: \$150,000 TOTAL: \$150,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Unavailable HQ-KT/Zimmerman, R. R. 59-Life Sci, NEC
(10-250 141-95-02)

NGL 50-002-001 University of Wisconsin - Madison 3686
Space-related research in theoretical chemistry in molecular,
quantum & statistical mechanics
Period *Obligations*
07/16/63-09/30/74 FY75: TOTAL: \$3,920,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bock, R. M. HQ-P/Redding, E. R. 12-Chemistry
(10-370 183-00-00)

NGL 50-002-013 University of Wisconsin - Madison 3687
Investigations and studies of ultraviolet stellar spectra and
associated instrumentation
Period *Obligations*
05/20/64-03/31/77 FY75: TOTAL: \$1,968,420
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Code, A. D. HQ-SG/Rosendhal, J. D. 11-Astronomy
HQ-SG/Roman, N. G.
(10-850 879-11-00) (10-850 188-00-00)

**NASA'S UNIVERSITY PROGRAM
WISCONSIN (Continued)**

NGL 50-002-044 University of Wisconsin - Madison 3688
 Research in cosmic and solar physics
Period *Obligations*
 10/25/65-12/31/76 FY75: \$72,500 TOTAL: \$1,585,161
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Kraushaar, W. L. HQ-SG/Lazarus, A. J. 11-Astronomy
 HQ-SG/Opp, A. G.
 (10-850 879-11-00) (10-850 188-00-00)

NGL 50-002-114 University of Wisconsin - Madison 3689
 Multidisciplinary studies of social, economic, and political impact of recent advances in satellite meteorology
Period *Obligations*
 02/25/69-12/01/74 FY75: TOTAL: \$450,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Suomi, V. E. HQ-P/Vitale, J. A. 39-Env Sci, NEC
 (10-680 160-00-00) (10-370 183-00-00) (10-371 340-00-00)

NGL 50-002-127 University of Wisconsin - Madison 3690
 Multidisciplinary research in space science & engineering
Period *Obligations*
 12/19/69-07/31/78 FY75: \$210,000 TOTAL: \$1,175,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Clapp, J. L. HQ-P/Vitale, J. A. 39-Env Sci, NEC
 (10-371 340-00-00)

NGR 50-002-051 University of Wisconsin - Madison 3691
 Applications of the direct photon absorption techniques for measuring bone-mineral content
Period *Obligations*
 09/01/66-08/31/76 FY75: \$50,000 TOTAL: \$479,164
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Cameron, J. R. ARC/Young, D. R. 52-Clinical Med
 Mazess, R. B.
 (21-970 970-23-30) (21-980 975-00-00)

NGR 50-002-162 University of Wisconsin - Madison 3692
 Solar wind physics
Period *Obligations*
 01/26/71-12/31/75 FY75: \$58,315 TOTAL: \$260,619
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Scherb, F. HQ-SG/Berko, F. W. 13-Physics
 HQ-SG/Ott, E. J.
 (10-850 188-36-55)

NGR 50-002-174 University of Wisconsin - Madison 3693
 Prevention of transmission of human respiratory viruses
Period *Obligations*
 03/01/72-07/31/75 FY75: TOTAL: \$52,870
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Dick, E. C. ARC/Mandel, A. D. 52-Clinical Med
 (21-970 970-21-00)

NGR 50-002-189 University of Wisconsin - Madison 3694
 Cloud image processing for planetary flybys
Period *Obligations*
 01/19/72-12/31/75 FY75: \$15,000 TOTAL: \$34,297
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Suomi, V. E. HQ-SL/Fellows, R. F. 31-Atmos Sci
 HQ-SL/Brunk, W. E.
 (10-840 384-47-81) (10-840 185-00-00)

NGR 50-002-191 University of Wisconsin - Madison 3695
 Elimination of microbial flora and its effect on immunity to infection
Period *Obligations*
 02/04/72-01/14/76 FY75: \$34,400 TOTAL: \$147,700
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Balish, E. ARC/Mandel, A. D. 52-Clinical Med
 (21-970 970-21-25) (21-970 970-21-00)

NGR 50-002-215 University of Wisconsin - Madison 3696
 Investigation of cloud displacement data in a sophisticated model of the atmosphere
Period *Obligations*
 03/01/73-05/31/76 FY75: \$40,000 TOTAL: \$119,634
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Suomi, V. E. GSFC/Halem, M. 31-Atmos Sci
 (51-680 611-13-00)

NGR 50-002-223 University of Wisconsin - Madison 3697
 Study of the use and design characteristics of visible and ultraviolet interference spectrometers for the large space telescope
Period *Obligations*
 10/01/73-08/31/75 FY75: \$1,320 TOTAL: \$5,340
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Roesler, F. L. GSFC/Sobieski, S. 11-Astronomy
 GSFC/Meese, K. J.
 (51-850 188-78-58) (51-850 893-78-56)

NGR 50-002-242 University of Wisconsin - Madison 3698
 Fabry-Perot observations of comet Kohoutek
Period *Obligations*
 12/10/73-11/30/74 FY75: TOTAL: \$9,001
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Roesler, F. L. GSFC/Hobbs, R. W. 11-Astronomy
 Scherb, F.
 (51-840 196-41-53)

NSG 1057 University of Wisconsin - Madison 3699
 Evaluation of LIDAR experiments to obtain meteorological and air quality measurements from a space shuttle platform
Period *Obligations*
 05/15/74-04/14/75 FY75: TOTAL: \$49,941
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Weinman, J. A. LARC/Remsberg, E. E. 31-Atmos Sci
 Eloranta, E. E.
 (23-601 645-20-01)

NSG 1196 University of Wisconsin - Madison 3700
 Statistical modeling and inference for orientation data
Period *Obligations*
 09/01/75-08/31/76 FY75: \$24,998 TOTAL: \$24,998
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Johnson, R. A. LARC/Campbell, J. W. 21-Mathematics
 Bhattacharyya, G. K.
 (23-704 506-90-21) (23-980 975-50-01)

NSG 2002 University of Wisconsin - Madison 3701
 Rapid diagnosis of rhinovirus infection by fluorescent IGG, IGM, and IGA antibody studies
Period *Obligations*
 01/15/74-01/14/76 FY75: \$25,000 TOTAL: \$50,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
 Dick, E. C. ARC/Mandel, A. D. 52-Clinical Med
 (21-970 970-21-25)

**NASA'S UNIVERSITY PROGRAM
WISCONSIN (Continued)**

NSG 7033 University of Wisconsin - Madison 3702
Investigation of the galactic and interplanetary night sky emission
Period *Obligations*
05/01/74-10/31/75 FY75: TOTAL: \$32,540
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Scherb, F. HQ-SG/Bogges, N. W. 11-Astronomy
Roesler, F. L. HQ-SG/Calahan, H. D.
(10-850 385-41-00)

NSG 7050 University of Wisconsin - Madison 3703
Data analysis of OAO-2 ultraviolet spectrophotometry
Period *Obligations*
07/01/74-06/30/76 FY75: \$306,700 TOTAL: \$306,700
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Code, A. D. HQ-SG/Roman, N. G. 11-Astronomy
HQ-SG/Calahan, H. D.
(10-850 385-41-00)

NSG 7133 University of Wisconsin - Madison 3704
Ultraviolet studies with the Dutch national satellite
Period *Obligations*
06/01/75-08/31/76 FY75: \$8,717 TOTAL: \$8,717
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Savage, B. D. HQ-SG/Rosendhal, J. D. 11-Astronomy
HQ-SG/Roman, N. G.
(10-850 385-41-00)

NGR 50-007-001 University of Wisconsin - Milwaukee 3705
Dynamic response and flow visualization analyses for helicopter rotor blades
Period *Obligations*
12/02/70-01/01/76 FY75: \$54,985 TOTAL: \$239,854
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bratanow, T. LARC/Young, W. H., Jr. 41-Aero Engr
HQ-RP/Ward, J. F.
(23-702 505-10-21) (23-760 721-00-00)

NGR 50-009-001 University of Wisconsin - Parkside 3706
Identification, distribution and significance of forms on Mars
Period *Obligations*
02/00/32-07/01/75 FY75: TOTAL: \$7,464
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Smith, E. I. HQ-SL/Dwornik, S. E. 32-Geological Sci
(10-840 384-50-80)

WYOMING

NAS 1-12798 University of Wyoming 3707
Conceptual design of a stratospheric aerosol Nimbus G spacecraft
Period *Obligations*
10/16/73-08/16/74 FY75: TOTAL: \$99,650
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pepin, T. J. LARC/Mauldin, L. E. 31-Atmos Sci
(23-680 683-00-00)

NAS 1-13213 University of Wyoming 3708
Stratospheric aerosol measurements for Apollo-Soyuz test project
Period *Obligations*
05/02/74-11/01/76 FY75: \$267,127 TOTAL: \$317,127
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pepin, T. J. LARC/Crumbly, K. H. 31-Atmos Sci
LARC/Mauldin, L. E., III
(23-930 966-30-00)

NAS 1-13797 University of Wyoming 3709
Stratospheric aerosol measurement instrument
Period *Obligations*
01/29/75-04/28/79 FY75: \$750,000 TOTAL: \$750,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pepin, T. J. LARC/Hedgepeth, K. D. 31-Atmos Sci
LARC/Mauldin, L. E., III
(23-680 642-12-00)

NAS 5-21799 University of Wyoming 3710
Analysis of ERTS-A imagery
Period *Obligations*
06/27/72-10/31/75 FY75: \$15,000 TOTAL: \$156,725
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Houston, R. S. GSFC/Gordon, F., Jr. 32-Geological Sci
(51-680 177-53-41)

NAS 5-21818 University of Wyoming 3711
Cooperative study of the geology of a test site in ice-free valleys of Antarctica
Period *Obligations*
10/11/72-05/01/75 FY75: TOTAL: \$7,002
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Houston, R. S. GSFC/Gordon, F., Jr. 32-Geological Sci
(51-680 641-00-00)

NAS 9-13298 University of Wyoming 3712
Multidisciplinary study of Wyoming test sites
Period *Obligations*
03/27/73-10/31/75 FY75: \$42,879 TOTAL: \$131,679
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Houston, R. S. JSC/Miller, M. L. 32-Geological Sci
(72-680 652-01-83)

NGR 51-001-035 University of Wyoming 3713
Search for relativistic magnetic charges in cosmic rays
Period *Obligations*
02/03/71-12/31/75 FY75: \$30,000 TOTAL: \$129,986
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tompkins, D. R., Jr. HQ-SG/Opp, A. G. 13-Physics
HQ-SG/Kavanagh, L. D., Jr.
(10-850 188-46-56) (10-850 188-46-52)

NGR 51-001-036 University of Wyoming 3714
Measurement of meteoric dust from the Lear jet
Period *Obligations*
05/17/71-02/01/75 FY75: TOTAL: \$52,778
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hackwell, J. A. ARC/Mason, R. H. 31-Atmos Sci
(21-850 352-00-00)

**NASA'S UNIVERSITY PROGRAM
WYOMING (Continued)**

NGR 51-001-045 University of Wyoming 3715
Dustsonde support for clear-air turbulence and air pollution studies
Period *Obligations*
06/19/72-12/31/75 FY75: TOTAL: \$49,847
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schroeder, D. J. LARC/McCormick, M. P. 31-Atmos Sci
(23-250 141-95-01)

NSG 1006 University of Wyoming 3716
Stratospheric aerosol measurements
Period *Obligations*
03/01/74-07/31/75 FY75: TOTAL: \$7,930
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pepin, T. J. LARC/Mauldin, L. E., III 31-Atmos Sci
Rosen, J. M. LARC/McCormick, M. P.
Hoffman, D. J.
(23-680 176-91-31)

VIRGIN ISLANDS

NGR 52-083-003 College of Virgin Islands 3717
Investigation of spectral reflectance properties of lunar and planetary surfaces
Period *Obligations*
04/30/69-12/31/74 FY75: TOTAL: \$134,239
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Adams, J. B. HQ-SM/Bryson, R. P. 32-Geological Sci
HQ-SM/Allenby, R. J.
(10-810 195-00-00)

CANADA

NGR 52-133-001 Laval University 3718
Rb-87 gas cell study
Period *Obligations*
01/09/70-09/30/73 FY75: TOTAL: \$35,290
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Vanier, J. GSFC/Major, F. G. 45-Elec Engr
(51-750 115-00-00)

NGR 52-163-001 University of New Brunswick 3719
Determination of NO₂ molecular parameters necessary for atmospheric slant path transmittance calculations
Period *Obligations*
08/10/72-08/15/74 FY75: TOTAL: \$60,300
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Young, C. LARC/Reichle, H. G., Jr. 31-Atmos Sci
(23-680 160-44-64)

NGR 52-026-039 University of Toronto 3720
Experimental determination of ultimate strength criteria for design of composite structures
Period *Obligations*
03/08/73-06/30/75 FY75: TOTAL: \$13,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tennyson, R. C. LARC/Foye, R. L. 41-Aero Engr
(23-704 501-00-00)

NSG 7079 University of Toronto 3721
Research on motion sickness
Period *Obligations*
09/01/74-08/31/75 FY75: \$10,000 TOTAL: \$10,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Johnson, W. H. HQ-MM/Halstead, T. W.
53-Other Medical
HQ-MM/Vinograd, S. P.
(10-970 970-11-11)

NGR 52-134-005 York University 3722
Studies of production and reaction processes of O(1D₂) of interest in the earth's atmosphere
Period *Obligations*
04/26/73-04/03/76 FY75: \$39,910 TOTAL: \$79,760
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schiff, H. I. LERC/Baker, C. E. 31-Atmos Sci
(22-702 505-03-32)

CHILE

NAS 5-1925 University of Chile 3723
Maintenance & operation of minitrack facilities
Period *Obligations*
09/21/62-05/31/76 FY75: \$2,686,080 TOTAL: \$19,024,550
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Danyau, C. R. GSFC/Lafleur, W. 99-Multi-Discip
GSFC/Woodward, L.
(51-500 311-20-10) (51-200 685-00-00)

ISRAEL

NGR 52-012-008 Israel Institute of Technology 3724
Automated wing structural design
Period *Obligations*
10/01/73-06/01/76 FY75: \$29,700 TOTAL: \$29,700
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Haftka, R. T. LARC/Dixon, S. C. 41-Aero Engr
LARC/Starnes, J. H.
(23-702 743-01-11) (23-702 743-32-11)

NSG 7072 Israel Institute of Technology 3725
Flutter suppression and gust alleviation using active controls
Period *Obligations*
08/01/74-09/30/77 FY75: \$26,512 TOTAL: \$26,512
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Nissim, E. LARC/Abel, I. 41-Aero Engr
LARC/Bland, S. R.
(23-704 501-23-32)

NSG 7083 Israel Institute of Technology 3726
Inelastic behavior of advanced composite materials (boron and graphite epoxy)
Period *Obligations*
08/01/74-07/30/76 FY75: \$20,785 TOTAL: \$20,785
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Weller, T. LARC/Bush, H. G. 41-Aero Engr
(23-702 505-02-42)

**NASA'S UNIVERSITY PROGRAM
APPENDIX A
CROSS INDEX BY GRANT/CONTRACT NUMBER**

Entries are arranged alphanumerically. Grants are identifiable by prefix letters NGF, NGL, NGR, NGT and NSG. All other prefixes denote contracts.

GRANT/ CONTRACT NUMBER	ACC NO.	GRANT/ CONTRACT NUMBER	ACC NO.	GRANT/ CONTRACT NUMBER	ACC NO.
NAS 1-6860	2454	NAS 1-13656	1253	NAS 2-8157	2334
NAS 1-9434	3506	NAS 1-13663	2755	NAS 2-8200	1730
NAS 1-9680	3168	NAS 1-13712	2521	NAS 2-8244	3450
NAS 1-9682	1305	NAS 1-13797	3709	NAS 2-8288	1408
NAS 1-9683	2785	NAS 1-13817	1729	NAS 2-8399	2853
NAS 1-9684	2328	NAS 1-13820	3508	NAS 2-8454	1491
NAS 1-9685	3331	NAS 1-13884	3592	NAS 2-8496	2700
NAS 1-9691	2329	NAS 1-13889	2596	NAS 2-8541	3633
NAS 1-9692	1306	NAS 1-13913	3478	NAS 2-8556	2108
NAS 1-9693	1835	NAS 1-14034	3479	NAS 2-8578	3054
NAS 1-9694	3632	NAS 2-3082	3437	NAS 2-8578	3054
NAS 1-9697	2519	NAS 2-6057	2461	NAS 2-8590	1938
NAS 1-9699	3407	NAS 2-6265	1102	NAS 2-8600	1939
NAS 1-9701	1307	NAS 2-6551	1974	NAS 2-8646	1492
NAS 1-9702	2330	NAS 2-6552	1554	NAS 2-8676	3269
NAS 1-9703	1183	NAS 2-6553	2087	NAS 2-8685	1474
NAS 1-9705	2645	NAS 2-6556	1185	NAS 2-8687	1940
NAS 1-10048	2106	NAS 2-6558	1642	NAS 2-8706	2787
NAS 1-10090	2832	NAS 2-6615	1663	NAS 2-8752	3670
NAS 1-10210	3561	NAS 2-6706	1308	NAS 2-8802	3409
NAS 1-10282	2833	NAS 2-7059	1613	NAS 2-8808	1493
NAS 1-10492	2299	NAS 2-7199	1309	NAS 2-8808	1493
NAS 1-10493	2895	NAS 2-7251	1488	NAS 2-8812	2523
NAS 1-10646	3590	NAS 2-7262	2332	NAS 2-8813	3671
NAS 1-10693	2331	NAS 2-7273	3058	NAS 2-8816	1693
NAS 1-11676	2520	NAS 2-7314	3668	NAS 2-8818	1106
NAS 1-11707	3507	NAS 2-7350	2647	NAS 2-8883	2141
NAS 1-11808	3480	NAS 2-7358	3443	NAS 2-8898	1310
NAS 1-11854	1266	NAS 2-7440	1489	NAS 2-8921	1262
NAS 1-11855	2713	NAS 2-7476	1103	NAS 2-8925	1263
NAS 1-11871	3094	NAS 2-7519	1473	NAS 3-14336	1311
NAS 1-11958	3481	NAS 2-7613	2597	NAS 3-17508	3295
NAS 1-12106	1661	NAS 2-7615	2648	NAS 3-17534	2335
NAS 1-12209	1767	NAS 2-7620	2333	NAS 3-17658	3149
NAS 1-12304	1763	NAS 2-7655	2931	NAS 3-17826	3045
NAS 1-12311	1184	NAS 2-7722	2004	NAS 3-17827	1882
NAS 1-12445	3492	NAS 2-7730	3142	NAS 3-17855	3110
NAS 1-12705	3449	NAS 2-7785	1490	NAS 3-17857	1644
NAS 1-12754	3562	NAS 2-7839	1104	NAS 3-17861	1883
NAS 1-12798	3707	NAS 2-7846	2786	NAS 3-18010	2039
NAS 1-12833	2944	NAS 2-7850	3026	NAS 3-18522	2714
NAS 1-12976	2107	NAS 2-7865	3408	NAS 3-18547	2997
NAS 1-13129	2086	NAS 2-7879	1407	NAS 3-18553	3593
NAS 1-13175	3591	NAS 2-7882	3669	NAS 3-18901	1884
NAS 1-13204	3667	NAS 2-7883	1105	NAS 3-18929	3088
NAS 1-13213	3708	NAS 2-7883	1105	NAS 3-19431	2576
NAS 1-13422	1881	NAS 2-7900	2522	NAS 3-19434	2715
NAS 1-13423	3477	NAS 2-7901	1692	NAS 3-19533	2462
NAS 1-13501	1662	NAS 2-7927	2038	NAS 3-19699	3042
NAS 1-13502	2646	NAS 2-7927	2038	NAS 3-19700	1885
NAS 1-13586	2699	NAS 2-7963	2834	NAS 3-19725	3659
		NAS 2-7969	1643	NAS 4-1995	1494
		NAS 2-8108	3469	NAS 4-2148	2109

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NAS 5-1810	2649	NAS 5-20565	2701	NAS 5-20999	3564
NAS 5-1925	3723	NAS 5-20622	2468	NAS 5-21055	1557
NAS 5-3838	2524	NAS 5-20672	3210	NAS 5-21505	1645
NAS 5-3949	2300	NAS 5-20674	1977	NAS 5-21756	2614
NAS 5-9096	1975	NAS 5-20680	2598	NAS 5-21773	2042
NAS 5-9317	3270	NAS 5-20681	2702	NAS 5-21778	1658
NAS 5-10102	1312	NAS 5-20683	2881	NAS 5-21785	2043
NAS 5-11039	2088	NAS 5-20705	2788	NAS 5-21798	3676
NAS 5-11062	2336	NAS 5-20707	3143	NAS 5-21799	3710
NAS 5-11063	2220	NAS 5-20714	2633	NAS 5-21812	1108
NAS 5-11064	2089	NAS 5-20715	3297	NAS 5-21818	3711
NAS 5-11066	1186	NAS 5-20721	1188	NAS 5-21820	1109
NAS 5-11067	1976	NAS 5-20764	2301	NAS 5-21822	2111
NAS 5-11073	2463	NAS 5-20772	1269	NAS 5-21827	1414
NAS 5-11074	2090	NAS 5-20793	2040	NAS 5-21831	3073
NAS 5-11080	1555	NAS 5-20796	3298	NAS 5-21833	1089
NAS 5-11081	1556	NAS 5-20803	1086	NAS 5-21844	2789
NAS 5-11082	2337	NAS 5-20806	2469	NAS 5-21852	2098
NAS 5-11128	2464	NAS 5-20810	1175	NAS 5-21857	3300
NAS 5-11167	2091	NAS 5-20814	2613	NAS 5-21880	2044
NAS 5-11173	2525	NAS 5-20818	2583	NAS 5-21884	1315
NAS 5-11265	2092	NAS 5-20826	2584	NAS 5-21960	1316
NAS 5-11276	2631	NAS 5-20833	2652	NAS 5-21965	3677
NAS 5-11279	2093	NAS 5-20834	2222	NAS 5-21968	1498
NAS 5-11309	2465	NAS 5-20837	2529	NAS 5-21970	1768
NAS 5-11310	2526	NAS 5-20838	1411	NAS 5-21980	2339
NAS 5-11361	3672	NAS 5-20839	2470	NAS 5-21982	3367
NAS 5-11362	2756	NAS 5-20841	1749	NAS 5-21983	3005
NAS 5-11363	1694	NAS 5-20843	1788	NAS 5-21984	3594
NAS 5-11376	2466	NAS 5-20865	3096	NAS 5-22071	2202
NAS 5-11380	2467	NAS 5-20871	1313	NAS 5-22263	1110
NAS 5-11405	1695	NAS 5-20872	2223	NAS 5-22277	2915
NAS 5-11406	3410	NAS 5-20877	3299	NAS 5-22304	3111
NAS 5-11407	3411	NAS 5-20883	2162	NAS 5-22307	1415
NAS 5-11415	2201	NAS 5-20884	2634	NAS 5-22311	2757
NAS 5-11431	2094	NAS 5-20885	3023	NAS 5-22319	3074
NAS 5-11438	2527	NAS 5-20914	1696	NAS 5-22325	2112
NAS 5-11444	1107	NAS 5-20915	1087	NAS 5-22341	2758
NAS 5-11450	2338	NAS 5-20916	2695	NAS 5-22342	2635
NAS 5-11674	1496	NAS 5-20922	2041	NAS 5-22343	2302
NAS 5-11687	2528	NAS 5-20939	2471	NAS 5-22344	1887
NAS 5-11694	2632	NAS 5-20943	2110	NAS 5-22346	3565
NAS 5-11988	3296	NAS 5-20946	3366	NAS 5-22349	3678
NAS 5-20028	2922	NAS 5-20948	1697	NAS 5-22360	2653
NAS 5-20041	2739	NAS 5-20954	2621	NAS 5-22372	1664
NAS 5-20062	2221	NAS 5-20955	3451	NAS 5-22374	2303
NAS 5-20064	1497	NAS 5-20956	1886	NAS 5-22375	1558
NAS 5-20065	3563	NAS 5-20959	1088	NAS 5-22379	3634
NAS 5-20068	3673	NAS 5-20961	2835	NAS 5-22383	1824
NAS 5-20069	2650	NAS 5-20967	1978	NAS 5-22384	2113
NAS 5-20079	1409	NAS 5-20969	1412	NAS 5-22392	2740
NAS 5-20080	1410	NAS 5-20973	3674	NAS 5-22408	2759
NAS 5-20093	2095	NAS 5-20974	3675	NAS 5-22409	1698
NAS 5-20094	2096	NAS 5-20982	3194	NAS 5-22410	3679
NAS 5-20492	1187	NAS 5-20983	1764	NAS 5-22417	1863
NAS 5-20507	2651	NAS 5-20987	1314	NAS 5-22422	1888
NAS 5-20521	3004	NAS 5-20995	1413	NAS 5-22440	1699

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NAS 5-22475	2932	NAS 8-26146	2865	NAS 8-29542	1049
NAS 5-22482	2654	NAS 8-26193	1015	NAS 8-29543	1050
NAS 5-22485	2340	NAS 8-26379	3301	NAS 8-29566	1115
NAS 5-22495	3232	NAS 8-26579	1016	NAS 8-29578	2836
NAS 5-23006	2473	NAS 8-26601	2968	NAS 8-29582	3303
NAS 5-23117	1317	NAS 8-26749	2562	NAS 8-29583	1666
NAS 5-23125	2615	NAS 8-26751	3302	NAS 8-29584	3213
NAS 5-23133	3112	NAS 8-26758	1614	NAS 8-29603	1416
NAS 5-23173	3178	NAS 8-26930	1017	NAS 8-29616	2742
NAS 5-23174	2163	NAS 8-27296	3211	NAS 8-29650	1051
NAS 5-23176	1111	NAS 8-27334	3115	NAS 8-29707	2973
NAS 5-23190	1731	NAS 8-27403	1192	NAS 8-29707	2973
NAS 5-23190	1731	NAS 8-27403	1192	NAS 8-29725	3657
NAS 5-23199	2304	NAS 8-27407	1980	NAS 8-29725	3657
NAS 5-23230	2474	NAS 8-27799	1623	NAS 8-29745	2887
NAS 5-23236	2790	NAS 8-27804	1112	NAS 8-29753	1891
NAS 5-23237	2224	NAS 8-27809	1043	NAS 8-29764	3304
NAS 5-23249	1270	NAS 8-27863	1113	NAS 8-29778	1807
NAS 5-23267	2475	NAS 8-27950	1941	NAS 8-29823	2513
NAS 5-23274	1700	NAS 8-27972	2342	NAS 8-29847	1647
NAS 5-23284	2655	NAS 8-27974	1560	NAS 8-29851	3305
NAS 5-23285	3680	NAS 8-27975	2343	NAS 8-29852	1018
NAS 5-23287	1190	NAS 8-27976	2600	NAS 8-29854	1502
NAS 5-23288	1979	NAS 8-27977	2530	NAS 8-29856	1019
NAS 5-23296	3681	NAS 8-27978	1193	NAS 8-29860	1892
NAS 5-23310	2476	NAS 8-28019	1074	NAS 8-29881	1020
NAS 5-23315	1191	NAS 8-28028	1194	NAS 8-29936	1078
NAS 5-23316	2203	NAS 8-28055	2344	NAS 8-29937	1079
NAS 5-23334	2005	NAS 8-28058	1010	NAS 8-30175	3066
NAS 5-23338	3271	NAS 8-28097	1044	NAS 8-30216	1052
NAS 6-1667	3272	NAS 8-28098	1075	NAS 8-30244	1053
NAS 6-1863	3595	NAS 8-28248	1045	NAS 8-30245	3369
NAS 6-1908	3452	NAS 8-28294	2477	NAS 8-30246	1893
NAS 6-2388	3596	NAS 8-28304	1046	NAS 8-30247	1054
NAS 6-2439	2741	NAS 8-28305	1646	NAS 8-30248	1021
NAS 6-2454	3368	NAS 8-28306	2345	NAS 8-30250	1667
NAS 6-2455	2760	NAS 8-28307	2866	NAS 8-30251	2882
NAS 6-2456	3043	NAS 8-28310	1500	NAS 8-30253	3455
NAS 6-2463	1499	NAS 8-28358	1501	NAS 8-30256	3214
NAS 6-2484	3006	NAS 8-28590	1665	NAS 8-30286	1055
NAS 6-2498	3453	NAS 8-28591	1889	NAS 8-30301	2346
NAS 6-2506	1559	NAS 8-28654	3097	NAS 8-30380	2164
NAS 6-2519	2761	NAS 8-28659	3065	NAS 8-30479	1080
NAS 6-2585	2450	NAS 8-28660	3188	NAS 8-30531	2347
NAS 6-2595	2285	NAS 8-28661	1114	NAS 8-30532	2762
NAS 6-2602	3113	NAS 8-28733	3683	NAS 8-30534	1894
NAS 6-2613	2045	NAS 8-28734	1744	NAS 8-30537	2348
NAS 6-2617	2945	NAS 8-28735	1890	NAS 8-30561	1011
NAS 6-2627	3454	NAS 8-28736	1047	NAS 8-30563	1056
NAS 8-20247	1841	NAS 8-28955	2185	NAS 8-30576	2349
NAS 8-20765	1014	NAS 8-29036	2563	NAS 8-30578	2867
NAS 8-21015	3682	NAS 8-29073	2442	NAS 8-30579	1503
NAS 8-21140	3114	NAS 8-29100	1076	NAS 8-30616	1057
NAS 8-24364	2341	NAS 8-29271	3212	NAS 8-30617	1895
NAS 8-24908	1040	NAS 8-29313	1195	NAS 8-30618	2564
NAS 8-24953	1041	NAS 8-29316	1048	NAS 8-30619	1930
NAS 8-25562	1073	NAS 8-29387	3684	NAS 8-30620	2165
NAS 8-26055	1042	NAS 8-29460	3234	NAS 8-30622	3370
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NAS 8-30625	2478	NAS 8-31378	1701	NAS 9-13102	3431
NAS 8-30653	1896	NAS 8-31386	3084	NAS 9-13143	3432
NAS 8-30654	1022	NAS 8-31397	2479	NAS 9-13176	3374
NAS 8-30656	3235	NAS 8-31413	2204	NAS 9-13196	1180
NAS 8-30657	1897	NAS 8-31434	2889	NAS 9-13262	3336
NAS 8-30737	1058	NAS 8-31441	2622	NAS 9-13271	2115
NAS 8-30752	2350	NAS 8-31459	3371	NAS 9-13273	2116
NAS 8-30753	2763	NAS 8-31470	2623	NAS 9-13274	2624
NAS 8-30772	1059	NAS 8-31510	2531	NAS 9-13298	3712
NAS 8-30774	1060	NAS 8-31513	2791	NAS 9-13301	2046
NAS 8-30813	1012	NAS 8-31537	1119	NAS 9-13308	2829
NAS 8-30878	3215	NAS 8-31538	2591	NAS 9-13311	2625
NAS 8-30879	3216	NAS 8-31556	3237	NAS 9-13313	2099
NAS 8-30880	1013	NAS 8-31564	3206	NAS 9-13322	3457
NAS 8-30883	3236	NAS 8-31565	1934	NAS 9-13331	2117
NAS 8-30884	1923	NAS 8-31566	3372	NAS 9-13332	2455
NAS 8-30885	1061	NAS 9-5632	1318	NAS 9-13337	3195
NAS 8-30886	1082	NAS 9-5886	2225	NAS 9-13342	1101
NAS 8-30887	3083	NAS 9-5911	3273	NAS 9-13347	2118
NAS 8-30919	1898	NAS 9-6037	2764	NAS 9-13360	3069
NAS 8-31006	2142	NAS 9-6164	1648	NAS 9-13363	2567
NAS 8-31143	3217	NAS 9-7801	1418	NAS 9-13364	2792
NAS 8-31145	1561	NAS 9-9317	2169	NAS 9-13370	2306
NAS 8-31149	2351	NAS 9-9690	3078	NAS 9-13380	2047
NAS 8-31150	2585	NAS 9-10261	2114	NAS 9-13394	1659
NAS 8-31169	1062	NAS 9-10428	3274	NAS 9-13406	3116
NAS 8-31170	1063	NAS 9-10537	3239	NAS 9-13410	3509
NAS 8-31171	1064	NAS 9-11045	2616	NAS 9-13452	3242
NAS 8-31172	1873	NAS 9-11118	3428	NAS 9-13457	3337
NAS 8-31174	1065	NAS 9-11162	3329	NAS 9-13462	3338
NAS 8-31188	1116	NAS 9-11201	3240	NAS 9-13512	3413
NAS 8-31189	3199	NAS 9-11528	2205	NAS 9-13540	3243
NAS 8-31190	1023	NAS 9-11676	3332	NAS 9-13589	1475
NAS 8-31192	1117	NAS 9-11827	3275	NAS 9-13617	3233
NAS 8-31193	1899	NAS 9-11845	3333	NAS 9-13642	2743
NAS 8-31194	1066	NAS 9-11846	2916	NAS 9-13647	3308
NAS 8-31195	3007	NAS 9-12074	3412	NAS 9-13669	3181
NAS 8-31196	1118	NAS 9-12168	3456	NAS 9-13680	3375
NAS 8-31197	3218	NAS 9-12280	1959	NAS 9-13737	3244
NAS 8-31223	1024	NAS 9-12334	2353	NAS 9-13743	3636
NAS 8-31233	2152	NAS 9-12434	3307	NAS 9-13799	1419
NAS 8-31235	3095	NAS 9-12466	1615	NAS 9-13803	3150
NAS 8-31237	1668	NAS 9-12485	2354	NAS 9-13807	1420
NAS 8-31292	2888	NAS 9-12526	2586	NAS 9-13844	1035
NAS 8-31293	1067	NAS 9-12560	2532	NAS 9-13865	3376
NAS 8-31294	3044	NAS 9-12563	2451	NAS 9-13878	3200
NAS 8-31321	1068	NAS 9-12564	2452	NAS 9-13894	3309
NAS 8-31332	3306	NAS 9-12568	3373	NAS 9-13904	3310
NAS 8-31333	3067	NAS 9-12630	3597	NAS 9-13940	2744
NAS 8-31343	1083	NAS 9-12650	3334	NAS 9-13945	1090
NAS 8-31344	1900	NAS 9-12728	3241	NAS 9-14006	3182
NAS 8-31345	1069	NAS 9-12757	1504	NAS 9-14016	2048
NAS 8-31346	1417	NAS 9-12770	2917	NAS 9-14052	2119
NAS 8-31347	1669	NAS 9-12776	3276	NAS 9-14134	1174
NAS 8-31350	2352	NAS 9-12777	3335	NAS 9-14195	2460
NAS 8-31373	2566	NAS 9-12912	3277	NAS 9-14197	3311
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NAS 9-14316	3340	NASR 86	1702	NCA 2-40504	1126
NAS 9-14322	3245	NASW 7	3729	NCA 2-40601	1127
NAS 9-14347	3341	NASW 1761	3727	NCA 2-40602	1128
NAS 9-14368	3246	NASW 1964	3059	NCA 2-45501	1179
NAS 9-14369	2587	NASW 2135	3728	NCA 2-50302	1425
NAS 9-14384	3342	NASW 2283	1121	NCA 2-50406	1426
NAS 9-14392	2143	NASW 2326	1943	NCA 2-50501	1427
NAS 9-14396	1616	NASW 2353	2028	NCA 2-50502	1428
NAS 9-14405	3377	NASW 2379	3060	NCA 2-50502	1428
NAS 9-14406	3247	NASW 2399	2716	NCA 2-50503	1429
NAS 9-14407	3248	NASW 2401	1935	NCA 2-50504	1430
NAS 9-14419	1421	NASW 2412	2355	NCA 2-50508	1431
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NAS 9-14429	3312	NASW 2435	3008	NCA 2-50510	1433
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NAS 9-14439	2626	NASW 2467	2029	NCA 2-10502	1245
NAS 9-14452	1423	NASW 2504	2737	NCA 2-10504	1246
NAS 9-14453	2120	NASW 2512	3061	NCA 2-65502	1671
NAS 9-14467	1670	NASW 2516	1745	NCA 2-65503	1672
NAS 9-14468	3249	NASW 2573	2794	NCA 2-80401	1476
NAS 9-14470	3313	NASW 2587	1789	NCA 2-80501	1477
NAS 9-14478	3314	NASW 2592	1649	NCA 2-80502	1478
NAS 9-14491	3378	NASW 2607	1732	NCA 2-80503	1479
NAS 9-14493	3315	NASW 2629	3062	NCA 2-80504	1480
NAS 9-14499	3444	NASW 2633	2717	NCA 2-80505	1481
NAS 9-14501	2179	NASW 2648	3458	NCA 2-80506	1482
NAS 9-14514	3316	NASW 2658	1936	NCA 2-40501	1847
NAS 9-14516	3343	NASW 2674	3152	NCA 2-53501	1248
NAS 9-14532	3344	NASW 2691	3349	NCA 2-53601	1249
NAS 9-14533	2103	NASW 2714	2030	NCA 2-90401	1264
NAS 9-14534	3345	NASW 2716	3685	NCA 2-90501	1265
NAS 9-14538	3003	NASW 2742	1944	NCA 2-95502	3350
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NAS 9-14556	3317	NASW 2766	1733	NCA 2-35501	2031
NAS 9-14557	3346	NASW 2768	1790	NCA 2-40405	2073
NAS 9-14560	3429	NASW 2771	1650	NCA 2-40406	2074
NAS 9-14565	1424	NASW 2776	3278	NCA 2-40501	2075
NAS 9-14581	3379	NASW 2787	2356	NCA 2-40502	2076
NAS 9-14583	3318	NASW 2793	2966	NCA 2-40503	2077
NAS 9-14603	3251	NASW 2827	3169	NCA 2-40504	2078
NAS 9-14609	2480	NAS10-7399	2705	NCA 2-40505	2079
NAS 9-14610	1972	NAS10-7791	1842	NCA 2-40506	2080
NAS 9-14629	3347	NAS10-8051	1843	NCA 2-40601	2081
NAS 9-14632	2153	NAS10-8354	3189	NCA 2-50501	2644
NAS 9-14640	3085	NAS10-8375	1901	NCA 2-63501	2104
NAS 9-14641	3433	NAS10-8399	1832	NCA 2-80501	3098
NAS 9-14645	1091	NAS10-8404	1844	NCA 2-85502	1254
NAS 9-14652	3348	NAS10-8498	1864	NCA 2-90402	1505
NAS 9-14661	3252	NAS10-8518	1122	NCA 2-90405	1506
NAS 9-14662	3253	NAS10-8560	1845	NCA 2-90406	1507
NAS 9-14689	3319	NAS10-8712	2706	NCA 2-90501	1508
NAS 9-14692	1120	NAS10-8740	1865	NCA 2-90502	1509
NAS 9-14697	2969	NAS10-8774	1846	NCA 2-90503	1510
NAS 9-14715	3254	NAS10-8795	1866	NCA 2-20403	2226
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NSG 1157	2608	NSG 2001	1261	NSG 2064	2735
NSG 1159	1874	NSG 2002	3701	NSG 2065	3403
NSG 1160	3466	NSG 2003	1464	NSG 2066	1304
NSG 1161	1802	NSG 2004	1915	NSG 2067	2154
NSG 1162	3500	NSG 2005	1260	NSG 2068	1544
NSG 1163	3227	NSG 2006	3293	NSG 2071	1396
NSG 1164	2780	NSG 2007	1390	NSG 2072	1397
NSG 1165	2136	NSG 2008	2516	NSG 2074	2996
NSG 1166	2738	NSG 2009	1686	NSG 2075	1640
NSG 1167	3553	NSG 2010	2416	NSG 2076	2420
NSG 1168	1913	NSG 2011	1267	NSG 2077	3365
NSG 1169	2750	NSG 2013	3002	NSG 2078	2820
NSG 1170	1803	NSG 2014	2547	NSG 2079	2273
NSG 1171	3228	NSG 2016	3625	NSG 2080	2884
NSG 1172	3554	NSG 2017	1391	NSG 2081	2324
NSG 1173	3488	NSG 2018	2505	NSG 2084	1468
NSG 1174	3326	NSG 2020	1392	NSG 2091	2084
NSG 1175	2129	NSG 2022	3473	NSG 3001	2274
NSG 1176	2504	NSG 2023	2582	NSG 3002	3164
NSG 1177	3555	NSG 2024	2417	NSG 3003	1085
NSG 1178	3106	NSG 2025	1543	NSG 3004	2557
NSG 1179	2938	NSG 2026	1465	NSG 3005	3021
NSG 1180	3585	NSG 2028	1859	NSG 3006	2421
NSG 1181	1820	NSG 2029	1831	NSG 3007	2876
NSG 1182	3622	NSG 2030	2612	NSG 3008	2020
NSG 1183	3070	NSG 2031	2323	NSG 3009	2987
NSG 1184	3019	NSG 2032	2418	NSG 3010	3165
NSG 1185	3036	NSG 2033	1279	NSG 3011	1687
NSG 1186	3556	NSG 2034	3055	NSG 3012	3136
NSG 1188	2875	NSG 2035	1393	NSG 3013	2151
NSG 1189	2137	NSG 2036	1639	NSG 3014	2517
NSG 1190	2415	NSG 2037	2680	NSG 3015	1917
NSG 1191	2963	NSG 2038	3626	NSG 3016	3137
NSG 1192	2138	NSG 2039	1620	NSG 3017	2422
NSG 1193	2272	NSG 2040	2083	NSG 3018	1860
NSG 1194	2920	NSG 2041	2173	NSG 3019	2821
NSG 1195	3623	NSG 2042	1159	NSG 3022	3038
NSG 1196	3700	NSG 2043	1466	NSG 3023	3093

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GRANT/ CONTRACT NUMBER	ACC NO.	GRANT/ CONTRACT NUMBER	ACC NO.	GRANT/ CONTRACT NUMBER	ACC NO.
NSG 3024	3039	NSG 5004	1740	NSG 5064	3146
NSG 3025	1657	NSG 5005	3404	NSG 5065	2212
NSG 3026	3000	NSG 5006	3050	NSG 5066	1777
NSG 3027	2988	NSG 5007	1762	NSG 5067	2213
NSG 3028	1469	NSG 5008	3109	NSG 5068	2002
NSG 3029	2062	NSG 5009	2195	NSG 5069	1741
NSG 3030	1954	NSG 5010	2064	NSG 5070	1547
NSG 3031	3138	NSG 5011	1690	NSG 6001	2282
NSG 3032	3139	NSG 5012	1920	NSG 6002	3560
NSG 3033	2085	NSG 5013	2751	NSG 7001	1596
NSG 3034	1593	NSG 5014	2629	NSG 7002	1548
NSG 3035	2518	NSG 5015	2911	NSG 7003	2912
NSG 3036	1918	NSG 5016	1821	NSG 7004	2508
NSG 3037	2069	NSG 5017	2275	NSG 7005	2549
NSG 3038	1688	NSG 5018	2880	NSG 7008	1549
NSG 3039	1970	NSG 5019	1787	NSG 7009	2325
NSG 3040	2989	NSG 5020	2937	NSG 7010	2427
NSG 3041	2548	NSG 5021	1822	NSG 7011	1165
NSG 3042	1971	NSG 5022	1161	NSG 7013	1641
NSG 3043	2021	NSG 5023	1162	NSG 7014	1166
NSG 3044	2423	NSG 5024	1399	NSG 7015	3286
NSG 3045	3040	NSG 5025	2072	NSG 7016	2609
NSG 3046	2424	NSG 5026	1861	NSG 7017	2283
NSG 3047	1594	NSG 5027	1951	NSG 7018	2326
NSG 3048	2070	NSG 5029	2211	NSG 7019	1099
NSG 3049	2187	NSG 5031	3405	NSG 7020	1167
NSG 3050	2781	NSG 5032	2848	NSG 7021	3476
NSG 3051	2910	NSG 5033	2849	NSG 7022	2972
NSG 3052	1919	NSG 5034	2850	NSG 7023	1233
NSG 3053	2990	NSG 5035	2276	NSG 7024	1168
NSG 3054	3072	NSG 5036	3177	NSG 7025	3287
NSG 3055	1595	NSG 5037	2822	NSG 7026	1271
NSG 3056	2022	NSG 5038	1834	NSG 7027	1597
NSG 3057	2877	NSG 5039	3655	NSG 7028	2753
NSG 3058	2991	NSG 5040	3230	NSG 7029	1401
NSG 3059	2847	NSG 5041	2863	NSG 7030	2024
NSG 3060	1689	NSG 5042	2277	NSG 7032	3288
NSG 3061	2425	NSG 5043	1163	NSG 7033	3702
NSG 3062	2992	NSG 5044	2507	NSG 7034	3424
NSG 3063	3049	NSG 5045	2851	NSG 7035	2993
NSG 3064	2426	NSG 5046	1164	NSG 7036	2913
NSG 3065	1256	NSG 5047	2278	NSG 7037	3327
NSG 3066	3041	NSG 5048	2279	NSG 7038	3474
NSG 3067	3053	NSG 5049	2023	NSG 7039	1958
NSG 3068	3448	NSG 5050	1400	NSG 7040	1100
NSG 3069	2712	NSG 5051	2198	NSG 7041	3051
NSG 3070	2071	NSG 5052	2199	NSG 7042	1402
NSG 3072	2879	NSG 5053	3559	NSG 7043	3289
NSG 4001	1545	NSG 5054	2926	NSG 7044	2025
NSG 4002	1398	NSG 5055	2296	NSG 7045	1169
NSG 4003	2063	NSG 5056	1546	NSG 7046	2284
NSG 4004	2130	NSG 5057	1470	NSG 7047	2643
NSG 4005	3107	NSG 5058	1232	NSG 7048	2428
NSG 4006	2131	NSG 5059	2280	NSG 7049	3231
NSG 4007	2132	NSG 5060	2823	NSG 7050	3703
NSG 5001	1160	NSG 5061	1862	NSG 7051	1096
NSG 5002	3229	NSG 5062	2281	NSG 7052	1550
NSG 5003	1786	NSG 5063	2683	NSG 7053	2684

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GRANT/ CONTRACT NUMBER	ACC NO.	GRANT/ CONTRACT NUMBER	ACC NO.	GRANT/ CONTRACT NUMBER	ACC NO.
NSG 7055	2214	NSG 7127	1471	NSG 9022	2864
NSG 7063	2297	NSG 7128	1727	NSG 9024	3468
NSG 7065	2878	NSG 7129	1238	NSG 9025	2784
NSG 7066	2736	NSG 7130	1728	NSG 9026	3438
NSG 7067	1921	NSG 7131	2687	NSG 9028	2886
NSG 7069	1922	NSG 7133	3704	NSG 9029	3328
NSG 7070	1170	NSG 7135	2826	NSG 9030	2177
NSG 7071	2894	NSG 7136	1239	NSG 9031	2510
NSG 7072	3725	NSG 7137	2509	NSR 05-002-071	1242
NSG 7073	3491	NSG 7138	3052	NSR 09-010-027	1806
NSG 7074	3436	NSG 7139	1472	NSR 12-001-019	1952
NSG 7075	2782	NSG 7140	1240	NSR 15-005-037	2065
NSG 7076	3192	NSG 7144	2752	NSR 21-001-077	2216
NSG 7077	2429	NSG 7145	1805	NSR 22-009-423	2434
NSG 7078	3140	NSG 7147	3166	NSR 23-005-376	2511
NSG 7079	3721	NSG 8001	1006	NSR 24-005-238	2551
NSG 7080	2685	NSG 8002	1931	NSR 24-005-245	2552
NSG 7081	2430	NSG 8003	1038	NSR 31-001-259	2688
NSG 7083	3726	NSG 8004	3180	NSR 31-001-286	2689
NSG 7084	1234	NSG 8005	2554	NSR 31-001-313	2690
NSG 7085	3656	NSG 8007	3198	NSR 31-001-901	2691
NSG 7087	2610	NSG 8008	2140	NSR 36-008-108	3022
NSG 7088	2686	NSG 8009	2575	NSR 39-011-064	3167
NSG 7089	3658	NSG 8010	1034	NSR 44-004-041	3426
NSG 7090	3467	NSG 8011	1007	NSR 44-004-089	3427
NSG 7091	2431	NSG 8012	3205	S-54214A	2512
NSG 7092	1403	NSG 8013	1008		
NSG 7093	2885	NSG 8014	1927		
NSG 7094	1235	NSG 8015	2558		
NSG 7095	2327	NSG 8016	2174		
NSG 7096	3193	NSG 8017	1031		
NSG 7097	2630	NSG 8018	2156		
NSG 7098	2298	NSG 8019	1875		
NSG 7099	1404	NSG 8020	1928		
NSG 7100	1598	NSG 8021	3187		
NSG 7101	1171	NSG 8022	1009		
NSG 7102	1599	NSG 8023	2559		
NSG 7104	2824	NSG 8025	2175		
NSG 7105	2783	NSG 8026	2560		
NSG 7106	1178	NSG 8027	1929		
NSG 7107	3425	NSG 9001	2176		
NSG 7108	2550	NSG 9002	1182		
NSG 7110	1405	NSG 9004	2215		
NSG 7111	3627	NSG 9005	3086		
NSG 7112	1236	NSG 9006	3267		
NSG 7113	1551	NSG 9007	3261		
NSG 7114	1172	NSG 9010	1823		
NSG 7115	2432	NSG 9011	3148		
NSG 7116	2852	NSG 9012	3440		
NSG 7117	1406	NSG 9013	2914		
NSG 7118	2433	NSG 9014	2161		
NSG 7119	3147	NSG 9015	3264		
NSG 7120	3141	NSG 9016	2561		
NSG 7121	1600	NSG 9017	3666		
NSG 7122	1610	NSG 9018	3268		
NSG 7123	1173	NSG 9019	1241		
NSG 7125	1237	NSG 9020	1611		
NSG 7126	2825	NSG 9021	3406		

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APPENDIX B

CROSS INDEX BY FIELD OF SCIENCE AND ENGINEERING

The Fields used here are specified by Amendment J, "Standard Classification of Fields of Science and Engineering," to Office of Management and Budget (OMB) Circular A-46, "Standards for Statistical Surveys." Field codes are interpreted as follows:

PHYSICAL SCIENCES 11 ASTRONOMY 12 CHEMISTRY 13 PHYSICS 19 PHYSICAL SCIENCES, NEC*	ENVIRONMENTAL SCIENCES <i>(Terrestrial and extraterrestrial)</i> 31 ATMOSPHERIC SCIENCES 32 GEOLOGICAL SCIENCES 33 OCEANOGRAPHY 39 ENVIRONMENTAL SCIENCES, NEC* ENGINEERING 41 AERONAUTICAL 42 ASTRONAUTICAL 43 CHEMICAL 44 CIVIL 45 ELECTRICAL 46 MECHANICAL 47 METALLURGY AND MATERIALS 49 ENGINEERING, NEC*	LIFE SCIENCES 51 BIOLOGY 52 CLINICAL MEDICAL 53 OTHER MEDICAL 59 LIFE SCIENCES, NEC*	SOCIAL SCIENCES 71 ANTHROPOLOGY 72 ECONOMICS 73 HISTORY 74 LINGUISTICS 75 POLITICAL SCIENCE 76 SOCIOLOGY 79 SOCIAL SCIENCE, NEC*
MATHEMATICS 21 ANY DISCIPLINE(S)		PSYCHOLOGICAL 61 BIOLOGICAL 62 SOCIAL ASPECTS 69 PSYCHOLOGICAL, NEC*	OTHER SCIENCES** 99 ALL DISCIPLINE(S)

*Not Elsewhere Classified (For interdisciplinary projects and others not listed by discipline name)

**For interdisciplinary projects which cannot be classified within any of the preceding main fields

Abbreviations used in the "Technical Officer Locations" column are discussed in the prefatory pages.

FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
11	ALABAMA A&M UNIV	Parnell, T. A.	MSFC	George, M. C.	NSG 8001	1006
11	BELOIT COLLEGE	Sobieski, S.	GSFC	Schroeder, D. J.	NGR 50-010-001	3664
11	BOSTON UNIVERSITY	Kupperian, J. E.	GSFC	Adelman, S. J.	NSG 5055	2296
11	BOWIE STATE COLLEGE	Boldt, E. A.	GSFC	Tornabene, H. S.	NGR 21-027-001	2190
11	BOWLING GRN STATE U	Bogges, N. W.	HQ-SG	Ptak, R. L.	NSG 7022	2972
11	BRANDEIS UNIVERSITY	Jordan, S. D.	HQ-SG	Stein, R. F.	NSG 7098	2298
11	BRIGHAM YOUNG UNIV	Brunk, W. E.	HQ-SL	Jones, D. E.	NGR 45-001-032	3446
11	CALIF INST OF TECH	Hall, C. F.	ARC	Munch, G.	NAS 2-6556	1185
11	CALIF INST OF TECH	Cameron, R. M.	ARC	Werner, M. W.	NGR 05-002-281	1217
11	CALIF INST OF TECH	Sobieski, S.	GSFC	Neugebauer, G.	NAS 5-23287	1190
11	CALIF INST OF TECH	Wrublik, D. P.	GSFC	Garmire, G. P.	NAS 5-23315	1191
11	CALIF INST OF TECH	Sobieski, S.	GSFC	Oke, J. B.	NGR 05-002-311	1226
11	CALIF INST OF TECH	Krome, H. O.	MSFC	Stone, E. C.	NAS 8-27403	1192
11	CALIF INST OF TECH	Krome, H. O.	MSFC	Stone, E. C.	NAS 8-27978	1193
11	CALIF INST OF TECH	Reichmann, E. J.	MSFC	Zirin, H.	NAS 8-28028	1194
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SG	Neugebauer, G.	NGL 05-002-007	1197
11	CALIF INST OF TECH	Weldon, J. M.	HQ-SG	Zirin, H.	NGL 05-002-034	1198
11	CALIF INST OF TECH	Rosendhal, J. D.	HQ-SG	Oke, J. B.	NGL 05-002-134	1201
11	CALIF INST OF TECH	Bogges, N. W.	HQ-SG	Ladle, G. H.	NGL 05-002-207	1207
11	CALIF INST OF TECH	Weldon, J. M.	HQ-SG	Leighton, R. B.	NGR 05-002-142	1213
11	CALIF INST OF TECH	Opp, A. G.	HQ-SG	Vogt, R. E.	NGR 05-002-160	1214
11	CALIF INST OF TECH	Bogges, N. W.	HQ-SG	Thorne, K. S.	NGR 05-002-256	1216
11	CALIF INST OF TECH	Opp, A. G.	HQ-SG	Garmire, G. P.	NGR 05-002-284	1218
11	CALIF INST OF TECH	Hallenbeck, D. R.	HQ-SG	Zirin, H.	NGR 05-002-294	1219
11	CALIF INST OF TECH	Hallenbeck, D. R.	HQ-SG	Garmire, G. P.	NGR 05-002-296	1220
11	CALIF INST OF TECH	Bogges, N. W.	HQ-SG	Neugebauer, G.	NSG 7140	1240
11	CALIF INST OF TECH	Chase, R. H.	HQ-SG	Zirin, H.	NSR 05-002-071	1242
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SL	Muhleman, D. O.	NGL 05-002-003	1196
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SL	Munch, G.	NGL 05-002-140	1203
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SL	Muhleman, D. O.	NGR 05-002-114	1210

APPENDIX B

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APPENDIX B CROSS INDEX BY FIELD OF SCIENCE AND ENGINEERING

FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SL	Westphal, J. A.	NGR 05-002-185	1215
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SL	Leighton, R. B.	NSG 7136	1239
11	CAL STATE U-FULLERTN	Dubin, M.	HQ-SG	Johnson, F. M.	NGR 05-071-002	1250
11	CAL STATE U-L ANGLES	Zill, L. P.	ARC	Goldwhite, H.	NCA 2-85502	1254
11	CASE WESTERN RESERVE	Wdowiak, T. J.	MSFC	Bidelman, W.	NAS 8-29707	2973
11	CITY COLLEGE OF N Y	Stothers, R. B.	GSFC	Erlbach, E.	NGL 33-013-040	2747
11	COLUMBIA UNIVERSITY	Donley, J. L.	GSFC	Novick, R.	NAS 5-11362	2756
11	COLUMBIA UNIVERSITY	Donley, J. L.	GSFC	Novick, R.	NAS 5-22341	2758
11	COLUMBIA UNIVERSITY	Thaddeus, P.	GSFC	Hartmann, S. R.	NGR 33-008-191	2774
11	COLUMBIA UNIVERSITY	Manning, H. S.	MSFC	Novick, R.	NAS 8-30532	2762
11	COLUMBIA UNIVERSITY	Manning, H. S.	MSFC	Novick, R.	NAS 8-30753	2763
11	COLUMBIA UNIVERSITY	Lazarus, A. J.	HQ-SG	Novick, R.	NGR 33-008-102	2767
11	COLUMBIA UNIVERSITY	Calahan, H. D.	HQ-SG	Wolff, R. S.	NGR 33-008-183	2772
11	COLUMBIA UNIVERSITY	Oertel, G. K.	HQ-SG	Wolff, R. S.	NGR 33-008-189	2773
11	COLUMBIA UNIVERSITY	Roman, N. G.	HQ-SG	Weisskopf, M. C.	NGR 33-008-194	2775
11	COLUMBIA UNIVERSITY	Oertel, G. K.	HQ-SG	Novick, R.	NGR 33-008-200	2777
11	COLUMBIA UNIVERSITY	Weldon, J. M.	HQ-SG	Novick, R.	NSG 7075	2782
11	COLUMBIA UNIVERSITY	Bogges, N. W.	HQ-SG	Zare, R. N.	NSG 7105	2783
11	CORNELL UNIVERSITY	Erickson, E. F.	ARC	Houck, J. R.	NAS 2-8706	2787
11	CORNELL UNIVERSITY	Cameron, R. M.	ARC	Houck, J. R.	NGR 33-010-081	2803
11	CORNELL UNIVERSITY	Cameron, R. M.	ARC	Harwit, M. O.	NGR 33-010-146	2809
11	CORNELL UNIVERSITY	Cameron, R. M.	ARC	Houck, J. R.	NGR 33-010-182	2814
11	CORNELL UNIVERSITY	Trombka, J. I.	GSFC	Greisen, K. I.	NSG 5037	2822
11	CORNELL UNIVERSITY	Opp, A. G.	HQ-SG	Greisen, K. I.	NGR 33-010-145	2808
11	CORNELL UNIVERSITY	Bogges, N. W.	HQ-SG	Harwit, M. O.	NGR 33-010-172	2811
11	CORNELL UNIVERSITY	Brunk, W. E.	HQ-SL	Harwit, M. O.	NGR 33-010-210	2818
11	CORNELL UNIVERSITY	Brunk, W. E.	HQ-SL	Veverka, J.	NSG 7126	2825
11	DARTMOUTH COLLEGE	Berko, F. W.	HQ-SG	Unavailable	NSG 7097	2630
11	DUKE UNIVERSITY	Trombka, J. I.	GSFC	O'Foghluha, F. R.	NGR 34-001-041	2934
11	FEDERAL CITY COLLEGE	Webster, W. H., Jr.	GSFC	Nottingham, W. C.	NGR 09-050-003	1781
11	FEDERAL CITY COLLEGE	Pohly, J. G.	HQ-P	McDowell, H.	NGR 09-050-010	1782
11	FLORIDA STATE UNIV	Brunk, W. E.	HQ-SL	Hunt, R. H.	NGR 10-004-056	1837
11	FOOTHILL COLLEGE	Reynolds, R. T.	ARC	Kellman, S. A.	NSG 2001	1261
11	HARVARD UNIVERSITY	Bradski, M.	ARC	Vaiana, G. S.	NSG 2081	2324
11	HARVARD UNIVERSITY	Underhill, A. B.	GSFC	Dupree, A. K.	NAS 5-20764	2301
11	HARVARD UNIVERSITY	Donley, J. L.	GSFC	Reeves, E. M.	NAS 5-22343	2302
11	HARVARD UNIVERSITY	White, A.	GSFC	Withbroe, G. L.	NAS 5-22374	2303
11	HARVARD UNIVERSITY	Kupperian, J. E.	GSFC	Noyes, R. W.	NGR 22-007-285	2322
11	HARVARD UNIVERSITY	Unavailable	MSFC	Goldberg, L.	NAS 5-3949	2300
11	HARVARD UNIVERSITY	Weldon, J. M.	HQ-SG	Goldberg, L.	NGR 22-007-202	2313
11	HARVARD UNIVERSITY	Weldon, J. M.	HQ-SG	Maxwell, A.	NGR 22-007-257	2316
11	HARVARD UNIVERSITY	Bogges, N. W.	HQ-SG	Fazio, G. G.	NGR 22-007-270	2319
11	HARVARD UNIVERSITY	Lazarus, A. J.	HQ-SG	Cameron, A. G.	NGR 22-007-272	2320
11	HARVARD UNIVERSITY	Weldon, J. M.	HQ-SG	Parkinson, W. H.	NSG 7009	2325
11	HARVARD UNIVERSITY	Timothy, A. F.	HQ-SG	Noyes, R. W.	NSG 7018	2326
11	HOUSTON BAPTIST UNIV	Kondo, Y.	JSC	Modisette, J. L.	NGR 44-081-001	3259
11	HOUSTON BAPTIST UNIV	Kondo, Y.	JSC	Modisette, J. L.	NGR 44-081-005	3260
11	HOWARD UNIVERSITY	Hobbs, R. W.	GSFC	Kumar, C. K.	NGR 09-011-056	1815
11	HOWARD UNIVERSITY	Maran, S. P.	GSFC	Kumar, C. K.	NSG 5021	1822
11	HOWARD UNIVERSITY	Pohly, J. G.	HQ-P	Kumar, C. K.	NGR 09-011-052	1812
11	INDIANA U-BLOOMINGTN	Bogges, N. W.	HQ-SG	Johnson, H. R.	NGL 15-003-002	2032
11	JERSEY CITY ST COL	Zill, L. P.	ARC	Bailey, W. L.	NCA 2-50501	2644
11	JOHNS HOPKINS UNIV	Bogges, A., III	GSFC	Rochelle, R. W.	NAS 5-23316	2203
11	JOHNS HOPKINS UNIV	Sobieski, S.	GSFC	Fastie, W. G.	NGR 21-001-115	2208
11	JOHNS HOPKINS UNIV	Kupperian, J. E.	GSFC	Moos, H. W.	NGR 21-001-120	2210
11	JOHNS HOPKINS UNIV	Kupperian, J. E.	GSFC	Henry, R. C.	NSG 5029	2211
11	JOHNS HOPKINS UNIV	Maran, S. P.	GSFC	Feldman, P. D.	NSG 5065	2212
11	JOHNS HOPKINS UNIV	Kupperian, J. E.	GSFC	Moos, H. W.	NSG 5067	2213

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APPENDIX B CROSS INDEX BY FIELD OF SCIENCE AND ENGINEERING

FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
11	JOHNS HOPKINS UNIV	Roman, N. G.	HQ-SG	Fastie, W. G.	NGR 21-001-001	2206
11	LEHIGH UNIVERSITY	Kondo, Y.	JSC	McCluskey, G. E., Jr.	NGR 39-007-061	3103
11	LA STATE U-BAT ROUGE	Browning, R. K.	GSFC	Huggett, R. W.	NAS 5-23174	2163
11	LA STATE U-BAT ROUGE	Opp, A. G.	HQ-SG	Huggett, R. W.	NGR 19-001-012	2168
11	LA STATE U-SHREVEPT	Giuli, R. T.	JSC	Moss, T. A.	NAS 9-9317	2169
11	MASS INST OF TECH	Cameron, R. M.	ARC	McCord, T. B.	NGR 22-009-718	2389
11	MASS INST OF TECH	Piterski, N. J.	GSFC	Clark, G. W.	NAS 5-11450	2338
11	MASS INST OF TECH	Unavailable	GSFC	Unavailable	NAS 5-22485	2340
11	MASS INST OF TECH	Sobieski, S.	GSFC	McCord, T. B.	NGR 22-009-778	2398
11	MASS INST OF TECH	Bodie, W. G.	MSFC	Bradt, H. V.	NAS 8-27972	2342
11	MASS INST OF TECH	Jordan, W.	MSFC	Lewin, W. H.	NAS 8-27975	2343
11	MASS INST OF TECH	Manning, H. S.	MSFC	Clark, G. W.	NAS 8-30531	2347
11	MASS INST OF TECH	Manning, H. S.	MSFC	Clark, G. W.	NAS 8-30752	2350
11	MASS INST OF TECH	Bogges, N. W.	HQ-SG	Weiss, R.	NGR 22-009-526	2380
11	MASS INST OF TECH	Dubin, M.	HQ-SG	McCord, T. B.	NGR 22-009-583	2383
11	MASS INST OF TECH	Opp, A. G.	HQ-SG	Bradt, H. V.	NGR 22-009-730	2393
11	MASS INST OF TECH	Roman, N. G.	HQ-SG	Weiss, R.	NSG 7091	2431
11	MASS INST OF TECH	Brunk, W. E.	HQ-SL	McCord, T. B.	NGR 22-009-473	2379
11	MASS INST OF TECH	Brunk, W. E.	HQ-SL	Pettengill, G. H.	NGR 22-009-672	2387
11	MONTANA STATE UNIV	Roman, N. G.	HQ-SG	Nordtvedt, K., Jr.	NGR 27-001-040	2611
11	NEW MEX INST MINING	Maran, S. O.	GSFC	Whipple, F. L.	NCA 5-30	2696
11	NEW MEX INST MINING	Maran, S. P.	GSFC	Hume, W.	NCA 5-43	2697
11	NEW MEX ST U-LAS CR	Harvey, G. A.	LARC	Beebe, R.	NAS 1-13586	2699
11	NEW MEX ST U-LAS CR	Roman, N. G.	HQ-SG	Liefeld, R. J.	NGL 32-003-069	2708
11	NEW MEX ST U-LAS CR	Brunk, W. E.	HQ-SL	Beebe, R. F.	NGL 32-003-001	2707
11	NEW YORK UNIVERSITY	Hall, C. F.	ARC	Weinberg, J.	NAS 2-7963	2834
11	NEW YORK UNIVERSITY	Lazarus, A. J.	HQ-SG	Korff, S. A.	NSG 7116	2852
11	NO CAROLINA STATE U	Dubin, M.	HQ-SG	Manring, E. R.	NGR 34-002-196	2955
11	NORTHWESTERN UNIV	Henize, K. G.	JSC	Telford, J. W.	NAS 9-12280	1959
11	NORTHWESTERN UNIV	Rosendhal, J. D.	HQ-SG	Huang, S. S.	NGL 14-007-041	1961
11	NORTHWESTERN UNIV	Sobieski, S.	HQ-SG	Bahng, J. D.	NGR 14-007-122	1967
11	POMONA COLLEGE	Cameron, R. M.	ARC	Webb, W.	NSG 2011	1267
11	PRINCETON UNIVERSITY	Kupperian, J. E.	GSFC	Spitzer, L., Jr.	NAS 5-1810	2649
11	PRINCETON UNIVERSITY	Sobieski, S.	GSFC	Spitzer, L., Jr.	NAS 5-20069	2650
11	PRINCETON UNIVERSITY	Sobieski, S.	GSFC	Lowrance, J. L.	NAS 5-20833	2652
11	PRINCETON UNIVERSITY	Sobieski, S.	GSFC	Danielson, R. E.	NAS 5-23284	2655
11	PRINCETON UNIVERSITY	Sobieski, S.	GSFC	Spitzer, L., Jr.	NGR 31-001-236	2667
11	PRINCETON UNIVERSITY	Sobieski, S.	GSFC	Morton, D. C.	NGR 31-001-306	2673
11	PRINCETON UNIVERSITY	Bogges, A., III	GSFC	Lowrance, J. L.	NSR 31-001-286	2689
11	PRINCETON UNIVERSITY	Harris, J. W.	JSC	Hollister, L. S.	NGL 31-001-283	2661
11	PRINCETON UNIVERSITY	Roman, N. G.	HQ-SG	Spitzer, L., Jr.	NGL 31-001-007	2657
11	PRINCETON UNIVERSITY	Roman, N. G.	HQ-SG	Millich, F.	NGR 31-001-001	2662
11	PRINCETON UNIVERSITY	Weldon, J. M.	HQ-SG	Schwartzchild, M.	NSG 7088	2686
11	PRINCETON UNIVERSITY	Sures, A. H.	HQ-SG	Morton, D. C.	NSR 31-001-259	2688
11	PRINCETON UNIVERSITY	Roman, N. G.	HQ-SG	Lowrance, J. L.	NSR 31-001-901	2691
11	PRINCETON UNIVERSITY	Brunk, W. E.	HQ-SL	Smith, W. H.	NGR 31-001-242	2668
11	PRINCETON UNIVERSITY	Brunk, W. E.	HQ-SL	Danielson, R. E.	NSG 7053	2684
11	PURDUE UNIVERSITY	Roman, N. G.	HQ-SG	Andrew, K. L.	NGL 15-005-003	2050
11	RICE UNIVERSITY	Gray, J. W.	WFC	Freeman, J. W.	NAS 6-1667	3272
11	RICE UNIVERSITY	Lazarus, A. J.	HQ-SG	Clayton, D. D.	NSG 7015	3286
11	SACRAMENTO CITY COL	Oertel, G. K.	HQ-SG	Vorpahl, J. A.	NGR 05-084-002	1268
11	SAN DIEGO STATE UNIV	Brandt, J. C.	GSFC	Angione, R. J.	NAS 5-23249	1270
11	SAN FRAN STATE UNIV	Zill, L. P.	ARC	Hagar, G.	NCA 2-60504	1276
11	SAN JOSE STATE UNIV	Reynolds, R. T.	ARC	Riegel, C.	NSG 2047	1303
11	SO UNIV-BATON ROUGE	Estabrook, F. B.	JPL	Chakkalakal, D. A.	NGR 19-005-006	2171
11	STANFORD UNIVERSITY	Zill, L. P.	ARC	Ritson, D.	NCA 2-45514	1336
11	STANFORD UNIVERSITY	Bradski, M.	ARC	Walker, A. B., Jr.	NSG 2049	1394
11	STANFORD UNIVERSITY	Derdeyn, S. M.	GSFC	Hofstadter, R.	NAS 5-20987	1314

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11	STANFORD UNIVERSITY	Wrublik, D. P.	GSFC	Hofstadter, R.	NAS 5-23117	1317
11	STANFORD UNIVERSITY	Opp, A. G.	HQ-SG	Hofstadter, R.	NGR 05-020-452	1365
11	STANFORD UNIVERSITY	Boggess, N. W.	HQ-SG	Petrosian, V.	NGR 05-020-510	1367
11	STANFORD UNIVERSITY	Weldon, J. M.	HQ-SG	Wilcox, J. M.	NGR 05-020-559	1369
11	STANFORD UNIVERSITY	Lazarus, A. J.	HQ-SG	Sturrock, P. A.	NGR 05-020-668	1377
11	STANFORD UNIVERSITY	Weldon, J. M.	HQ-SG	Walker, A. B.	NGR 05-020-695	1381
11	STANFORD UNIVERSITY	Jordan, S. D.	HQ-SG	Sturrock, P. A.	NSG 7092	1403
11	STANFORD UNIVERSITY	Jordan, S. D.	HQ-SG	Walker, A. B.	NSG 7099	1404
11	STATE UNIV NY-ALBANY	Klinglesmith, D. A.	GSFC	Alvord, G. C.	NAS 5-20683	2881
11	STATE UNIV NY-ALBANY	Hobbs, R. W.	GSFC	Weinberg, J. L.	NGR 33-182-018	2883
11	ST U NY COL-GENESE	Rosendhal, J. D.	HQ-SG	Meisel, D. D.	NGR 33-219-002	2918
11	STATE U NY-STONY BRK	Cameron, R. M.	ARC	Knacke, R. F.	NGR 33-015-166	2905
11	STATE U NY-STONY BRK	Chiu, H. Y.	GSFC	Owen, T.	NGL 33-015-082	2896
11	STATE U NY-STONY BRK	Hobbs, R. W.	GSFC	Simon, M.	NGR 33-015-195	2908
11	STATE U NY-STONY BRK	Lazarus, A. J.	HQ-SG	Forman, M. A.	NGR 33-015-180	2907
11	STATE U NY-STONY BRK	Weldon, J. M.	HQ-SG	Stroke, G. W.	NSG 7003	2912
11	STATE U NY-STONY BRK	Brunk, W. E.	HQ-SL	Owen, T.	NGR 33-015-141	2901
11	UNIV ALA-HUNTSVILLE	Parnell, T. A.	MSFC	Hiser, H. W.	NAS 8-24908	1040
11	UNIV ALA-HUNTSVILLE	Jordan, S. D.	HQ-SG	Rao, G. L.	NGR 01-008-015	1071
11	UNIV ALA-TUSCALOOSA	Miller, E. R.	MSFC	Fay, T. D.	NAS 8-31343	1083
11	UNIV ALASKA-FAIRBNKS	Baker, B. R.	JSC	Davis, T. N.	NAS 9-14645	1091
11	UNIV OF ARIZONA	Hall, C. F.	ARC	Gehrels, A. M.	NAS 2-6265	1102
11	UNIV OF ARIZONA	Wirth, M. N.	ARC	Baker, L. R.	NAS 2-7476	1103
11	UNIV OF ARIZONA	Zill, L. P.	ARC	Hubbard, W. B., Jr.	NCA 2-40501	1123
11	UNIV OF ARIZONA	Zill, L. P.	ARC	Hubbard, W. B., Jr.	NCA 2-40602	1128
11	UNIV OF ARIZONA	Cameron, R. M.	ARC	Larson, H. P.	NGR 03-002-332	1148
11	UNIV OF ARIZONA	Cameron, R. M.	ARC	Hoffman, W. F.	NGR 03-002-390	1156
11	UNIV OF ARIZONA	Cameron, R. M.	ARC	Woolf, N.	NSG 2042	1159
11	UNIV OF ARIZONA	Stecher, T. P.	GSFC	Kuiper, G. P.	NAS 5-22263	1110
11	UNIV OF ARIZONA	Browning, R. K.	GSFC	Bowen, T.	NAS 5-23176	1111
11	UNIV OF ARIZONA	Pearl, J. C.	GSFC	Fink, U. W.	NCA 5-47	1131
11	UNIV OF ARIZONA	Hoffman, W. F.	GSFC	Lee, T. A.	NGR 03-002-180	1144
11	UNIV OF ARIZONA	Sobieski, S.	GSFC	Serkowski, K. M.	NGR 03-002-363	1150
11	UNIV OF ARIZONA	Sobieski, S.	GSFC	Gilbert, G. R.	NGR 03-002-372	1153
11	UNIV OF ARIZONA	Hobbs, R. W.	GSFC	Fink, U. W.	NGR 03-002-392	1157
11	UNIV OF ARIZONA	Hobbs, R. W.	GSFC	Larson, S. M.	NGR 03-002-393	1158
11	UNIV OF ARIZONA	Sobieski, S.	GSFC	Angel, J. R.	NSG 5001	1160
11	UNIV OF ARIZONA	Hansen, J. E.	GSFC	Gehrels, A. M.	NSG 5043	1163
11	UNIV OF ARIZONA	Lundquist, C. A.	MSFC	Sonett, C. P.	NAS 8-31188	1116
11	UNIV OF ARIZONA	Lundquist, C. A.	MSFC	Sonett, C. P.	NAS 8-31192	1117
11	UNIV OF ARIZONA	Miller, E. R.	MSFC	Sonett, C. P.	NAS 8-31196	1118
11	UNIV OF ARIZONA	Roman, N. G.	HQ-SG	Bashkin, S.	NGL 03-002-017	1134
11	UNIV OF ARIZONA	Roman, N. G.	HQ-SG	Tiftt, W. G.	NGL 03-002-032	1136
11	UNIV OF ARIZONA	Dubin, M.	HQ-SG	Gehrels, A. M.	NGL 03-002-081	1137
11	UNIV OF ARIZONA	Opp, A. G.	HQ-SG	Bowen, T.	NGR 03-002-071	1141
11	UNIV OF ARIZONA	Roman, N. G.	HQ-SG	Low, F. J.	NGR 03-002-269	1146
11	UNIV OF ARIZONA	Sobieski, S.	HQ-SG	Weymann, R. J.	NGR 03-002-309	1147
11	UNIV OF ARIZONA	Boggess, N. W.	HQ-SG	Hoffman, W. F.	NGR 03-002-371	1152
11	UNIV OF ARIZONA	Opp, A. G.	HQ-SG	Jokippi, J.	NSG 7101	1171
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Sonett, C. P.	NGL 03-002-002	1132
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Roemer, E.	NGL 03-002-122	1138
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Gehrels, A. M.	NGR 03-002-219	1145
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Low, F. J.	NGR 03-002-356	1149
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Hubbard, W. B., Jr.	NSG 7045	1169
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Fink, U. W.	NSG 7070	1170
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Unavailable	NSG 7114	1172
11	UNIV OF ARIZONA	Fe, R. F.	HQ-SL	Unavailable	NSG 7123	1173
11	UNIV ARKANSAS-FAYETV	Rosendhal, J. D.	HQ-SG	Hughes, R. H.	NSG 7106	1178

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11	UNIV CALIF-BERKELEY	Cameron, R. M.	ARC	Townes, C. H.	NGR 05-003-432	1447
11	UNIV CALIF-BERKELEY	Cameron, R. M.	ARC	Townes, C. H.	NGR 05-003-511	1457
11	UNIV CALIF-BERKELEY	Kupperian, J. E.	GSFC	Spinrad, H.	NGR 05-003-587	1463
11	UNIV CALIF-BERKELEY	Kupperian, J. E.	GSFC	Bowyer, C. S.	NSG 5057	1470
11	UNIV CALIF-BERKELEY	Sanders, J. M.	JSC	Bowyer, C. S.	NAS 9-13799	1419
11	UNIV CALIF-BERKELEY	Sanders, J. M.	JSC	Bowyer, C. S.	NAS 9-13807	1420
11	UNIV CALIF-BERKELEY	Boggess, N. W.	HQ-SG	Townes, C. H.	NGL 05-003-272	1437
11	UNIV CALIF-BERKELEY	Lazarus, A. J.	HQ-SG	Price, P. B.	NGR 05-003-376	1445
11	UNIV CALIF-BERKELEY	Lazarus, A. J.	HQ-SG	Bowyer, C. S.	NGR 05-003-450	1449
11	UNIV CALIF-BERKELEY	Oertel, G. K.	HQ-SG	Anderson, K. A.	NGR 05-003-510	1456
11	UNIV CALIF-BERKELEY	Lazarus, A. J.	HQ-SG	Heckman, H. H.	NGR 05-003-513	1458
11	UNIV CALIF-BERKELEY	Lazarus, A. J.	HQ-SG	Alvarez, L. W.	NGR 05-003-553	1459
11	UNIV CALIF-BERKELEY	Rosendhal, J. D.	HQ-SG	Silk, J. I.	NGR 05-003-578	1462
11	UNIV CALIF-BERKELEY	Rosendhal, J. D.	HQ-SG	Bowyer, C. S.	NSG 7139	1472
11	UNIV CALIF-BERKELEY	Brunk, W. E.	HQ-SL	Townes, C. H.	NGR 05-003-452	1451
11	UNIV CALIF-L ANGELES	Hall, C. F.	ARC	Coleman, P. J., Jr.	NAS 2-7251	1488
11	UNIV CALIF-L ANGELES	Kupperian, J. E.	GSFC	Plavec, M.	NGR 05-007-489	1541
11	UNIV CALIF-L ANGELES	Kupperian, J. E.	GSFC	Peters, C. J.	NSG 5056	1546
11	UNIV CALIF-L ANGELES	Kupperian, J. E.	GSFC	Jura, M. A.	NSG 5070	1547
11	UNIV CALIF-L ANGELES	Dubin, M.	HQ-SG	Wetherill, G. W.	NGL 05-007-005	1514
11	UNIV CALIF-L ANGELES	Weldon, J. M.	HQ-SG	Alley, L. H.	NGL 05-007-046	1516
11	UNIV CALIF-L ANGELES	Dwornik, S. E.	HQ-SL	Kaula, W. M.	NSG 7113	1551
11	UNIV CALIF-RIVERSIDE	Opp, A. G.	HQ-SG	White, R. S.	NGR 05-008-022	1553
11	UNIV CALIF-SAN DIEGO	Hall, C. F.	ARC	Fillius, R. W.	NAS 2-6552	1554
11	UNIV CALIF-SAN DIEGO	Cameron, R. M.	ARC	Soifrr, B. T.	NGL 05-009-230	1572
11	UNIV CALIF-SAN DIEGO	Cameron, R. M.	ARC	Stein, W. A.	NGR 05-005-055	1574
11	UNIV CALIF-SAN DIEGO	White, A.	GSFC	Peterson, L. E.	NAS 5-22375	1558
11	UNIV CALIF-SAN DIEGO	Sobieski, S.	GSFC	Beaver, E. A.	NGR 05-009-239	1587
11	UNIV CALIF-SAN DIEGO	Jordan, W. E.	MSFC	Peterson, L. E.	NAS 8-27974	1560
11	UNIV CALIF-SAN DIEGO	Stanley, R.	WFC	Hendershott, M.	NAS 6-2506	1559
11	UNIV CALIF-SAN DIEGO	Roman, N. G.	HQ-SG	Gould, R. J.	NGL 05-005-004	1563
11	UNIV CALIF-SAN DIEGO	Dwornik, S. E.	HQ-SG	Alfven, H.	NGR 05-009-110	1579
11	UNIV CALIF-SAN DIEGO	Aucremanne, M. J.	HQ-SG	McIlwain, C. E.	NGR 05-009-188	1581
11	UNIV CALIF-SAN DIEGO	Jordan, S. D.	HQ-SG	Penner, S. S.	NGR 05-009-226	1586
11	UNIV CALIF-S CRUZ	Boggess, N. W.	HQ-SG	Rank, D. M.	NGR 05-061-015	1612
11	UNIV OF CHICAGO	Hall, C. F.	ARC	Simpson, J. A.	NAS 2-6551	1974
11	UNIV OF CHICAGO	Cameron, R. M.	ARC	Harper, D. A.	NGR 14-001-211	1996
11	UNIV OF CHICAGO	Cameron, R. M.	ARC	Harper, D. A.	NGR 14-001-227	1998
11	UNIV OF CHICAGO	Cameron, R. M.	ARC	Hildebrand, R. H.	NSG 2057	2001
11	UNIV OF CHICAGO	White, A. F., Jr.	GSFC	Meyer, P.	NAS 5-20967	1978
11	UNIV OF CHICAGO	Sobieski, S.	GSFC	Van Altena, W. F.	NAS 5-23288	1979
11	UNIV OF CHICAGO	Kupperian, J. E.	GSFC	Adams, T. E.	NSG 5068	2002
11	UNIV OF CHICAGO	Dabbs, J. R.	MSFC	Meyer, P.	NAS 8-27407	1980
11	UNIV OF CHICAGO	Lazarus, A. J.	HQ-SG	Parker, E. N.	NGL 14-001-001	1981
11	UNIV OF CHICAGO	Lazarus, A. J.	HQ-SG	Meyer, P.	NGL 14-001-005	1982
11	UNIV OF CHICAGO	Lazarus, A. J.	HQ-SG	Simpson, J. A.	NGL 14-001-006	1983
11	UNIV OF CHICAGO	Dubin, M.	HQ-SG	Adams, T.	NGL 14-001-060	1985
11	UNIV OF CHICAGO	Rosendhal, J. D.	HQ-SG	Hobbs, L. M.	NGR 14-001-147	1992
11	UNIV OF CHICAGO	Weldon, J. M.	HQ-SG	Blake, R. L.	NGR 14-001-164	1993
11	UNIV OF CINCINNATI	Lancaster, E. R.	GSFC	Danielli, J. F.	NGR 36-004-068	3033
11	UNIV OF CINCINNATI	Brunk, W. E.	HQ-SL	Herget, P.	NGR 36-004-075	3035
11	UNIV COLORADO-BOLDR	Cameron, R. M.	ARC	Webb, W.	NSG 2055	1726
11	UNIV COLORADO-BOLDR	Donley, J. L.	GSFC	Brunner, E. C.	NAS 5-11363	1694
11	UNIV COLORADO-BOLDR	Underhill, A. B.	GSFC	Linsky, J. L.	NAS 5-23274	1700
11	UNIV COLORADO-BOLDR	Sobieski, S.	GSFC	Lillie, C. F.	NGR 06-003-219	1718
11	UNIV COLORADO-BOLDR	Weldon, J. M.	HQ-SG	Bruner, E. C.	NGR 06-003-069	1707
11	UNIV COLORADO-BOLDR	Roman, N. G.	HQ-SG	Lillie, C. F.	NGR 06-003-176	1709
11	UNIV COLORADO-BOLDR	Roman, N. G.	HQ-SG	Lillie, C. F.	NGR 06-003-179	1710

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11	UNIV COLORADO-BOLDR	Calahan, H. D.	HQ-SG	Linsky, J. L.	NGR 06-003-216	1717
11	UNIV COLORADO-BOLDR	Dubin, M.	HQ-SG	Lillie, C. F.	NGR 06-003-222	1719
11	UNIV COLORADO-BOLDR	Opp, A. G.	HQ-SG	McCray, R.	NSG 7128	1727
11	UNIV OF DENVER	Hobbs, R. W.	GSFC	Lesh, J. R.	NGR 06-004-133	1739
11	UNIV OF DENVER	Kupperian, J. E.	GSFC	Lesh, J. R.	NSG 5004	1740
11	UNIV OF DENVER	Kupperian, J. E.	GSFC	Lesh, J. R.	NSG 5069	1741
11	UNIV OF FLORIDA	Unavailable	GSFC	Wood, F. B.	NGR 10-005-183	1858
11	UNIV OF FLORIDA	Hallenbeck, D. R.	HQ-SG	Carr, T. D.	NGR 10-005-176	1856
11	UNIV OF HAWAII	Kupperian, J. E.	GSFC	Boesgaard, A. M.	NSG 5027	1951
11	UNIV OF HAWAII	McGuire, J. P.	MSFC	Jefferies, J. T.	NAS 8-27950	1941
11	UNIV OF HAWAII	Weir, J. F.	HQ-BX	Jefferies, J. T.	NASW 2742	1944
11	UNIV OF HAWAII	Weldon, J. M.	HQ-SG	Jefferies, J. T.	NGL 12-001-011	1945
11	UNIV OF HAWAII	Timothy, A. F.	HQ-SG	Jefferies, J. T.	NGR 12-001-075	1948
11	UNIV OF HAWAII	Brunk, W. E.	HQ-SL	Jefferies, J. T.	NGL 12-001-057	1947
11	UNIV OF HAWAII	Brunk, W. E.	HQ-SL	Jefferies, J. T.	NSR 12-001-019	1952
11	UNIV OF HAWAII	Strickland, A. T.	HQ-SM	Jefferies, J. T.	NASW 2326	1943
11	UNIV OF HOUSTON	Golden, R. L.	JSC	Sheldon, W. R.	NAS 9-14209	3339
11	UNIV ILLINOIS-URBANA	Rosendhal, J. D.	HQ-SG	Swenson, G. W.	NSG 7030	2024
11	UNIV ILLINOIS-URBANA	Brunk, W. E.	HQ-SL	Dickel, J. R.	NGR 14-005-176	2010
11	UNIV OF IOWA	Hall, C. F.	ARC	Van Allen, J. A.	NAS 2-6553	2087
11	UNIV OF IOWA	Madden, J. J.	GSFC	Gurnett, D. A.	NAS 5-11074	2090
11	UNIV OF IOWA	White, C. E.	GSFC	Gurnett, D. A.	NAS 5-11279	2093
11	UNIV OF IOWA	Allen, R. F., Jr.	GSFC	Van Allen, J. A.	NAS 5-20539	2097
11	UNIV MARYLAND-BALT	Roman, N. G.	HQ-SG	Misner, C. W.	NGR 21-002-010	2219
11	UNIV MARYLAND-COL PK	Zill, L. P.	ARC	Ponnamperuma, C.	NCA 2-20501	2227
11	UNIV MARYLAND-COL PK	Fischel, D.	GSFC	Rosenfeld, A.	NCA 5-1	2228
11	UNIV MARYLAND-COL PK	Klinglesmith, D. A.	GSFC	Rosenfeld, A.	NCA 5-5	2229
11	UNIV MARYLAND-COL PK	Fainberg, J.	GSFC	Kundu, M. R.	NGL 21-002-367	2234
11	UNIV MARYLAND-COL PK	Clark, T. A.	GSFC	Richard, J. P.	NSG 5035	2276
11	UNIV MARYLAND-COL PK	Kupperian, J. E.	GSFC	Bell, R. A.	NSG 5059	2280
11	UNIV MARYLAND-COL PK	Dubin, M.	HQ-SG	Opik, E. J.	NGR 21-002-002	2235
11	UNIV MARYLAND-COL PK	Jordan, S. D.	HQ-SG	Wilkerson, T. D.	NGR 21-002-007	2236
11	UNIV MARYLAND-COL PK	Lazarus, A. J.	HQ-SG	Earl, J. A.	NGR 21-002-066	2237
11	UNIV MARYLAND-COL PK	Roman, N. G.	HQ-SG	Griem, H. R.	NGR 21-002-073	2238
11	UNIV MARYLAND-COL PK	Lazarus, A. J.	HQ-SG	Gloeckler, G.	NGR 21-002-224	2241
11	UNIV MARYLAND-COL PK	Boggess, N. W.	HQ-SG	Currie, D. G.	NGR 21-002-301	2247
11	UNIV MARYLAND-COL PK	Kavanagh, L. D., Jr.	HQ-SG	Matthews, D. L.	NGR 21-002-386	2257
11	UNIV MARYLAND-COL PK	Brunk, W. E.	HQ-SL	Kundu, M. R.	NGR 21-002-199	2240
11	UNIV OF MASS-AMHERST	Weldon, J. M.	HQ-SG	Strong, J.	NGL 22-010-025	2445
11	UNIV OF MASS-AMHERST	Weldon, J. M.	HQ-SG	Hueuenin, G. R.	NGR 22-010-039	2447
11	UNIV OF MASS-AMHERST	Brunk, W. E.	HQ-SL	Irvine, W. M.	NGL 22-010-023	2444
11	UNIV MICH-ANN ARBOR	Pelz, D. T.	GSFC	Carignan, G. R.	NAS 5-11309	2465
11	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-23310	2476
11	UNIV MICH-ANN ARBOR	Jordan, S. D.	HQ-SG	Mohler, O. C.	NGL 23-005-275	2483
11	UNIV MICH-ANN ARBOR	Rosendhal, J. D.	HQ-SG	Hiltner, W. A.	NGR 23-005-464	2490
11	UNIV MICH-ANN ARBOR	Weldon, J. M.	HQ-SG	Teske, R. G.	NGR 23-005-543	2496
11	UNIV MICH-ANN ARBOR	Ubin, M. D.	HQ-SG	Donahue, T. M.	NSG 7137	2509
11	U MINN-MNPLS-ST PAUL	Cameron, R. M.	ARC	Ney, E. P.	NGR 24-005-267	2544
11	U MINN-MNPLS-ST PAUL	Cameron, R. M.	ARC	Ney, E. P.	NSG 2014	2547
11	U MINN-MNPLS-ST PAUL	Cameron, R. M.	ARC	Ney, E. P.	NSR 24-005-238	2551
11	U MINN-MNPLS-ST PAUL	White, C. E.	GSFC	Kellogg, P. J.	NAS 5-11310	2526
11	U MINN-MNPLS-ST PAUL	Krome, H. O.	MSFC	Waddington, C. J.	NAS 8-27977	2530
11	U MINN-MNPLS-ST PAUL	Lazarus, A. J.	HQ-SG	Waddington, C. J.	NGR 24-005-050	2538
11	U MINN-MNPLS-ST PAUL	Roman, N. G.	HQ-SG	Luyten, W. J.	NSR 24-005-245	2552
11	UNIV NEBRASKA-LINCLN	Kupperian, J. E.	GSFC	Gallagher, J. S.	NGR 28-004-028	2620
11	UNIV NEW HAMPSHIRE	Teegarden, B. J.	GSFC	Wobber, W. R.	NAS 5-11276	2631
11	UNIV NEW HAMPSHIRE	Wales, R. O.	GSFC	Arnoldy, R. L.	NAS 5-11694	2632
11	UNIV NEW HAMPSHIRE	Donley, J. L.	GSFC	Chupp, E. L.	NAS 5-22342	2635

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11	UNIV NEW HAMPSHIRE	Lazarus, A. J.	HQ-SG	Chupp, E. L.	NGL 30-002-021	2637
11	UNIV NEW HAMPSHIRE	Opp, A. G.	HQ-SG	Webber, W. R.	NGR 30-002-052	2638
11	UNIV OF NEW MEXICO	Dubin, M.	HQ-SG	Peterson, A. W.	NGR 32-004-068	2731
11	UNIV OREGON-EUGENE	Cameron, R. M.	ARC	Donnelly, R. J.	NGR 38-003-034	3081
11	UNIV OF PITTSBURGH	Dwornik, S. E.	HQ-SL	Unavailable	NSG 7147	3166
11	UNIV OF ROCHESTER	Cameron, R. M.	ARC	Pipher, J. L.	NGR 33-019-127	2924
11	UNIV OF ROCHESTER	Kupperian, J. E.	GSFC	Savedoff, M. P.	NSG 5054	2926
11	UNIV OF ROME	Bavely, J. C.	HQ-TN	Broglio, L.	NASW 2135	3728
11	UNIV OF SOUTHERN CAL	Hall, C. F.	ARC	Judge, D. L.	NAS 2-6558	1642
11	UNIV OF SOUTHERN CAL	Hall, C. F.	ARC	Intriligator, D. S.	NAS 2-7969	1643
11	UNIV TENNESSEE-KNOXV	Harris, J. W.	JSC	Taylor, L. A.	NGL 43-001-140	3220
11	UNIV TENNESSEE-KNOXV	Weldon, J. M.	HQ-SG	Sellin, I. A.	NSG 7049	3231
11	UNIV TEXAS-AUSTIN	Mason, R. H.	ARC	Ulrich, B. T.	NGR 44-012-240	3392
11	UNIV TEXAS-AUSTIN	Sobieski, S.	GSFC	Tull, R. G.	NGR 44-012-260	3395
11	UNIV TEXAS-AUSTIN	Sobieski, S.	GSFC	Nather, R. E.	NGR 44-012-261	3396
11	UNIV TEXAS-AUSTIN	Sobieski, S.	GSFC	Angel, J. R.	NGR 44-012-263	3397
11	UNIV TEXAS-AUSTIN	Kupperian, J. E.	GSFC	Lambert, D. L.	NSG 5005	3404
11	UNIV TEXAS-AUSTIN	Kupperian, J. E.	GSFC	Parsons, S. B.	NSG 5031	3405
11	UNIV TEXAS-AUSTIN	Potter, A. E.	JSC	Barnes, T. G., III	NAS 9-12568	3373
11	UNIV TEXAS-AUSTIN	Eichelman, W. F.	JSC	Henize, K. G.	NAS 9-13176	3374
11	UNIV TEXAS-AUSTIN	Unavailable	MSFC	Unavailable	NAS 8-31459	3371
11	UNIV TEXAS-AUSTIN	Rosendhal, J. D.	HQ-SG	Vanden Bout, P. A.	NGR 44-012-209	3387
11	UNIV TEXAS-AUSTIN	Jordan, S. D.	HQ-SG	Bengtson, P. D.	NGR 44-012-258	3394
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Cogdell, J. R.	NGL 44-012-006	3380
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Douglas, J. N.	NGL 44-012-055	3382
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Trafton, L.	NGR 44-012-152	3384
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Mulholland, J. D.	NGR 44-012-282	3400
11	UNIV TEXAS-AUSTIN	Strickland, A. T.	HQ-SM	Mulholland, J. D.	NGR 44-012-219	3388
11	UNIV TEXAS-DALLAS	Opp, A. G.	HQ-SG	Allum, F. R.	NGR 44-004-133	3421
11	UNIV OF TOLEDO	Kupperian, J. E.	GSFC	Molnar, M. R.	NGR 36-010-031	3048
11	UNIV OF TOLEDO	Kupperian, J. E.	GSFC	Molnar, M. R.	NSG 5006	3050
11	UNIV OF TOLEDO	Dubin, M.	HQ-SG	Witt, A. D.	NGR 36-010-022	3046
11	UNIV OF TOLEDO	Roman, N. G.	HQ-SG	Witt, A. N.	NSG 7041	3051
11	UNIV OF TOLEDO	Rosendahl, J. D.	HQ-SG	Molnar, M. R.	NSG 7138	3052
11	UNIV OF VIRGINIA	Kelsall, T. N.	GSFC	Frederick, L. W.	NAS 5-20065	3563
11	UNIV OF VIRGINIA	Leckrone, D. S.	GSFC	Oconnell, R. W.	NAS 5-22346	3565
11	UNIV OF VIRGINIA	Sobieski, S.	GSFC	Frederick, L. W.	NGR 47-005-204	3576
11	UNIV OF VIRGINIA	Roman, N. G.	HQ-SG	Frederick, L. W.	NGL 47-005-066	3568
11	UNIV OF WASHINGTON	Underhill, A. B.	GSFC	Bohm-Vitense, E.	NAS 5-22379	3634
11	UNIV OF WASHINGTON	Kupperian, J. E.	GSFC	Wallerstein, G.	NGR 48-002-166	3654
11	UNIV OF WASHINGTON	Dubin, M.	HQ-SG	Hodge, P. W.	NGR 48-002-033	3643
11	UNIV OF WASHINGTON	Brunk, W. E.	HQ-SL	Jin, R. S.	NGR 48-002-142	3649
11	UNIV WISC-MADISON	White, A.	GSFC	Code, A. D.	NAS 5-20973	3674
11	UNIV WISC-MADISON	Leckrone, D. S.	GSFC	Anderson, C. M.	NAS 5-22349	3678
11	UNIV WISC-MADISON	Sobieski, S.	GSFC	Bless, R. C.	NAS 5-23285	3680
11	UNIV WISC-MADISON	Sobieski, S.	GSFC	Roesler, F. L.	NGR 50-002-223	3697
11	UNIV WISC-MADISON	Hobbs, R. W.	GSFC	Roesler, F. L.	NGR 50-002-242	3698
11	UNIV WISC-MADISON	Ponder, T. W.	MSFC	Kraushaar, W. L.	NAS 8-21015	3682
11	UNIV WISC-MADISON	Odell, C. R.	MSFC	Code, A. D.	NAS 8-29387	3684
11	UNIV WISC-MADISON	Rosendhal, J. D.	HQ-SG	Code, A. D.	NGL 50-002-013	3687
11	UNIV WISC-MADISON	Lazarus, A. J.	HQ-SG	Kraushaar, W. L.	NGL 50-002-044	3688
11	UNIV WISC-MADISON	Bogges, N. W.	HQ-SG	Scherb, F.	NSG 7033	3702
11	UNIV WISC-MADISON	Roman, N. G.	HQ-SG	Code, A. D.	NSG 7050	3703
11	UNIV WISC-MADISON	Rosendhal, J. D.	HQ-SG	Savage, B. D.	NSG 7133	3704
11	VIRGINIA POLY INST	Fedor, J. V.	GSFC	Meirovitch, L.	NGR 47-004-126	3608
11	VIRGINIA POLY INST	Fellows, R. F.	HQ-SL	McGee, H. A.	NGL 47-004-080	3599
11	WASHINGTON TECH INST	Hobbs, R. W.	GSFC	Kasten, A.	NCA 5-40	1825
11	WASHINGTON UNIVERSTY	Krome, H. O.	MSFC	Israel, M. H.	NAS 8-27976	2600

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11	WASHINGTON UNIVERSTY	Lazarus, A. J.	HQ-SG	Klarmann, J.	NGR 26-008-001	2604
11	WASHINGTON UNIVERSTY	Boggess, N. W.	HQ-SG	Friedlander, M. W.	NGR/26-008-069	2605
11	WESLEYAN UNIVERSITY	Roman, N. G.	HQ-SG	Page, T.	NGR 07-006-004	1748
11	YALE UNIVERSITY	Sobieski, S.	GSFC	Schuster, B. G.	NAS 5-20841	1749
11	YESHIVA UNIVERSITY	Hansen, J. E.	GSFC	Cameron, A. G.	NGL 33-023-018	2928
12	ARIZONA STATE UNIV	Harris, J. W.	JSC	Moore, C. B.	NGR 03-001-057	1098
12	ATLANTA UNIVERSITY	Curry, J. E.	MSFC	Reed, J. L.	NSG 8019	1875
12	AUBURN UNIV-AUBURN	Shackelford, B. W.	MSFC	Sforzini, R. H.	NCA 8-106	1025
12	BENEDICT COLLEGE	Kent, M. I.	MSFC	Kinard, J. T.	NSG 8004	3180
12	BENNETT COLLEGE-NC	Cofer, W. R., III	LARC	Greauk, A. E.	NSG 1032	2930
12	BOWIE STATE COLLEGE	Gross, F. C.	GSFC	Rock, M.	NSG 5009	2195
12	BROWN UNIVERSITY	Howe, J. T.	ARC	Mason, E. A.	NGL 40-002-059	3170
12	CALIF INST OF TECH	Harris, J. W.	JSC	Silver, L. T.	NGL 05-002-187	1204
12	CALIF INST OF TECH	Harris, J. W.	JSC	Wasserburg, G. J.	NGL 05-002-188	1205
12	CAL STATE U-FULLERTN	Young, R. S.	HQ-SL	Wegner, P. A.	NGR 05-071-008	1252
12	CASE WESTERN RESERVE	Quattrone, P. D.	ARC	Yeager, E.	NGR 36-027-050	2979
12	CASE WESTERN RESERVE	Quattrone, P. D.	ARC	Yeager, E.	NGR 36-027-052	2981
12	CASE WESTERN RESERVE	Harris, J. W.	JSC	Radcliffe, S. V.	NGL 36-027-057	2977
12	CASE WESTERN RESERVE	Kohl, F. J.	LERC	Mateescu, G. D.	NSG 3009	2987
12	CATHOLIC UNIVERSITY	Fichtel, C. E.	GSFC	Crannell, H.	NGR 09-005-077	1773
12	CATHOLIC UNIVERSITY	Stief, L. J.	GSFC	Timmons, R. B.	NGR 09-005-103	1775
12	CLARKSON COL OF TECH	Lerner, N. R.	ARC	Jellinek, H. H.	NSG 2059	2754
12	COLLEGE OF WM & MARY	Young, P. R.	LARC	Kranbuehl, D. E.	NSG 1095	3487
12	COLLEGE OF WM & MARY	Cofer, W. R., III	LARC	Tyree, S. Y., Jr.	NSG 1204	3490
12	COLUMBIA UNIVERSITY	Harris, J. W.	JSC	Ridley, W. I.	NGR 33-008-199	2776
12	COPPIN STATE COLLEGE	Ford, F. E.	GSFC	McDermott, P. P.	NSG 5051	2198
12	CORNELL UNIVERSITY	Young, R. S.	HQ-SL	Sagan, C. E.	NGR 33-010-101	2804
12	DELAWARE STATE COL	Picciolo, G. L.	GSFC	Bush, V. N.	NSG 5007	1762
12	ELIZABETH CITY ST U	Conway, E. J.	LARC	Chatterjee, K. K.	NSG 1179	2938
12	HAMPTON INSTITUTE	Jachimowski, C. J.	LARC	Hunter, C. E.	NSG 1086	3498
12	HARVARD UNIVERSITY	Harris, J. W.	JSC	Hays, J. F.	NGL 22-007-247	2311
12	INDIANA U-BLOOMINGTN	Zill, L. P.	ARC	Hayes, J.	NCA 2-35501	2031
12	INDIANA U-BLOOMINGTN	Harris, J. W.	JSC	Meinschein, W. G.	NGR 15-003-105	2036
12	KENT STATE UNIV	Quattrone, P. D.	ARC	Madex, R.	NSG 2013	3002
12	KENTUCKY STATE UNIV	Patterson, W. J.	MSFC	Marano, G. A.	NSG 8008	2140
12	LEHIGH UNIVERSITY	Harris, J. W.	JSC	Goldstein, J. I.	NGR 39-007-056	3102
12	MASS INST OF TECH	Quattrone, P. D.	ARC	Reid, R. C.	NGR 22-009-723	2390
12	MASS INST OF TECH	Quattrone, P. D.	ARC	Steinfeld, J. I.	NGR 22-009-766	2397
12	MASS INST OF TECH	Quattrone, P. D.	ARC	Modell, M.	NGR 22-009-799	2404
12	MASS INST OF TECH	Harris, J. W.	JSC	Burns, R. G.	NGR 22-009-551	2382
12	MASS INST OF TECH	Hess, R. V.	LARC	Wrighton, M. S.	NSG 1048	2411
12	MASS INST OF TECH	Young, R. S.	HQ-SL	Rich, A.	NGR 22-009-277	2374
12	MOREHOUSE COLLEGE	Stephens, J. B.	MSFC	Gales, J. N.	NGL 11-008-001	1924
12	MORRIS BROWN COLLEGE	Patterson, W. J.	MSFC	Weaver, F.	NSG 8027	1929
12	NM HIGHLANDS UNIV	Bryan, C. J.	KSC	Clark, R. D.	NSG 804	2694
12	NO DAKOTA STATE UNIV	Hall, L. B.	HQ-SL	Hill, T. W.	NGR 35-001-012	2970
12	OAKWOOD COLLEGE	Kent, M. I.	MSFC	Richardson, D.	NSG 8017	1031
12	OLD DOMINION UNIV	Johnston, N. J.	LARC	Williams, R. L.	NGL 47-003-008	3510
12	PENNSYLVANIA STATE U	Slemp, W. S.	LARC	Allcock, H. R.	NSG 1141	3135
12	POLY INST OF NY	Zill, L. P.	ARC	Pearce, E. M.	NCA 2-95501	2854
12	POLY INST OF NY	Fohlen, G. M.	ARC	Morawetz, H. E.	NSG 2060	2862
12	POLY INST OF NY	Young, R. S.	HQ-SL	Eirich, F. R.	NGR 33-006-070	2857
12	POMONA COLLEGE	Williams, T. S., Jr.	LARC	Baird, A. K.	NAS 1-11854	1266
12	PRAIRIE VIEW A&M U	Williams, R. J.	JSC	Stubblefield, C. T.	NSG 9018	3268
12	PRINCETON UNIVERSITY	Sobieski, S.	GSFC	Danielson, R. E.	NAS 5-22482	2654
12	PRINCETON UNIVERSITY	Johnston, N. J.	LARC	Gillham, J. K.	NGR 31-001-221	2666
12	PRINCETON UNIVERSITY	Dunning, J. W., Jr.	LERC	Glassman, I.	NGR 31-001-312	2675
12	RENSSELAER POLY-NY	Young, R. S.	HQ-SL	Ferris, J. P.	NGR 33-018-148	2871

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12	SAN FRAN STATE UNIV	Zill, L. P.	ARC	Orenberg, J. B.	NCA 2-60410	1272
12	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Neptune, J.	NCA 2-75409	1283
12	SAN JOSE STATE UNIV	Wydeven, T. J.	ARC	Spitze, L. A.	NGR 05-046-011	1301
12	SAN JOSE STATE UNIV	Wydeven, T. J.	ARC	Spitze, L. A.	NSG 2066	1304
12	SHAW UNIVERSITY	Bell, V. L.	LARC	Chatterji, A. K.	NSG 1033	2967
12	STANFORD UNIVERSITY	Zill, L. P.	ARC	Loew, G. B.	NCA 2-45506	1328
12	STANFORD UNIVERSITY	Zill, L. P.	ARC	Pound, G. M.	NCA 2-45511	1333
12	STANFORD UNIVERSITY	Chang, S.	ARC	Loew, G. H.	NGR 05-020-405	1362
12	STATE UNIV NY-BUFFAL	Harris, J. W.	JSC	Cadenhead, D. A.	NGL 33-183-013	2891
12	STATE UNIV NY-BUFFAL	Young, R. S.	HQ-SL	Danielli, J. F.	NGR 33-015-002	2892
12	STATE U NY-STONY BRK	Harris, J. W.	JSC	Schaeffer, O. A.	NGL 33-015-174	2898
12	STATE U NY-STONY BRK	Young, R. S.	HQ-SL	Owen, T.	NGR 33-015-169	2906
12	TALLADEGA COLLEGE	Rosser, R. W.	ARC	Kray, W. D.	NGR 01-007-010	1033
12	TEXAS A&M UNIVERSITY	Zill, L. P.	ARC	Flamm, D.	NCA 2-73501	3320
12	TEXAS A&M UNIVERSITY	Young, R. S.	HQ-SL	Fendler, J. H.	NSG 7037	3327
12	UNIV ALA-BIRMINGHAM	Young, R. S.	HQ-SL	Lacey, J. C., Jr.	NGR 01-010-001	1039
12	UNIV OF ARIZONA	Harris, J. W.	JSC	Drake, M. J.	NGR 03-002-388	1155
12	UNIV CALIF-BERKELEY	Riccitiello, S. R.	ARC	Williamson, R. B.	NSG 2084	1468
12	UNIV CALIF-BERKELEY	Harris, J. W.	JSC	Price, P. B.	NGL 05-003-410	1441
12	UNIV CALIF-BERKELEY	Young, R. S.	HQ-SL	Jukes, J. H.	NGR 05-003-460	1452
12	UNIV CALIF-L ANGELES	Chang, S.	ARC	Kaplan, I. R.	NAS 2-7440	1489
12	UNIV CALIF-L ANGELES	Zill, L. P.	ARC	Douglass, D. L.	NCA 2-90402	1505
12	UNIV CALIF-L ANGELES	Harris, J. W.	JSC	Wasson, J. T.	NGL 05-007-367	1520
12	UNIV CALIF-L ANGELES	Johnston, M. H.	MSFC	Yue, A. S.	NAS 8-29854	1502
12	UNIV CALIF-SAN DIEGO	Harris, J. W.	JSC	Arnold, J. R.	NGL 05-009-148	1569
12	UNIV CALIF-SAN DIEGO	Harris, J. W.	JSC	Marti, K.	NGL 05-009-150	1570
12	UNIV CALIF-SAN DIEGO	Young, R. S.	HQ-SL	Miller, S. L.	NGR 05-009-218	1585
12	UNIV CALIF-S BARBARA	Zill, L. P.	ARC	Shanabarger, M. R.	NCA 2-80501	1606
12	UNIV OF CHICAGO	Harris, J. W.	JSC	Clayton, R. N.	NGL 14-001-169	1987
12	UNIV OF CONNECTICUT	Antoine, A. C.	LERC	Wells, A. F.	NGR 07-002-058	1746
12	UNIV OF DENVER	Quattrone, P. D.	ARC	Ross, L. W.	NGR 06-004-125	1737
12	UNIV OF FLORIDA	Schell, J. T.	MSFC	Patterson, E. P.	NAS 8-20247	1841
12	UNIV OF HAWAII	Young, R. S.	HQ-SL	Folsome, C. E.	NGR 12-001-109	1949
12	UNIV OF HOUSTON	Young, R. S.	HQ-SL	Becker, R. S.	NGR 44-005-091	3357
12	UNIV ILLINOIS-URBANA	Thom, K.	HQ-NS	Miley, G. H.	NGR 14-005-183	2013
12	UNIV ILLINOIS-URBANA	Young, R. S.	HQ-SL	Woese, C. R.	NSG 7044	2025
12	UNIV OF KENTUCKY	Gordon, S.	LERC	Conger, W. L.	NGR 18-001-086	2149
12	UNIV MARYLAND-COL PK	Zill, L. P.	ARC	Ponnamperuma, C.	NCA 2-20403	2226
12	UNIV MARYLAND-COL PK	Stief, L. J.	GSFC	Ponnamperuma, C. A.	NAS 5-20834	2222
12	UNIV MARYLAND-COL PK	Conrath, B. J.	GSFC	Ponnamperuma, C. A.	NAS 5-20872	2223
12	UNIV MARYLAND-COL PK	Pellet, G. L.	LARC	Guard, R. W.	NSG 1031	2268
12	UNIV MARYLAND-COL PK	Young, R. S.	HQ-SL	Ponnamperuma, C. A.	NGR 21-002-317	2250
12	UNIV MARYLAND-COL PK	Young, R. S.	HQ-SL	Ponnamperuma, C. A.	NGR 21-002-425	2263
12	UNIV OF MIAMI	Young, R. S.	HQ-SL	Fox, S. W.	NGR 10-007-008	1867
12	UNIV OF MIAMI	Young, R. S.	HQ-SL	Harada, K.	NGR 10-007-052	1868
12	U MINN-MNPLS-ST PAUL	Geib, D. S.	HQ-SL	Swain, F. M.	NGR 24-005-275	2545
12	UNIV MO-KANSAS CITY	Ginoza, H. S.	ARC	Millich, F.	NGR 26-001-018	2590
12	UNIV OF NEW MEXICO	Harris, J. W.	JSC	Keil, K.	NGL 32-004-063	2727
12	UNIV OF NEW MEXICO	Williams, T. S., Jr.	LARC	Keil, K.	NAS 1-11855	2713
12	UNIV OF PITTSBURGH	Fordyce, J. S.	LERC	Liu, C. C.	NAS 3-17658	3149
12	UNIV OF PITTSBURGH	Baker, C. E.	LERC	Kaufman, F.	NGR 39-011-161	3162
12	UNIV OF PITTSBURGH	Leibecki, H. F.	LERC	Liu, C. C.	NSG 3002	3164
12	UNIV OF PITTSBURGH	O'Donnell, P. M.	LERC	Liu, C. C.	NSG 3010	3165
12	UNIV SAN FRANCISCO	Kourtides, D. A.	ARC	Hilado, C. J.	NSG 2039	1620
12	UNIV OF SANTA CLARA	Zill, L. P.	ARC	Sweeney, M. A.	NCA 2-85502	1627
12	UNIV OF SO CAROLINA	Young, R. S.	HQ-SL	Rohlfing, D. L.	NGR 41-002-034	3191
12	UNIV SO MISSISSIPPI	Johnston, N. J.	LARC	Thames, S. F.	NGR 25-005-005	2578
12	UNIV OF UTAH	Kourtides, D. A.	ARC	Petatjan, J. H.	NAS 2-8244	3450

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12	UNIV OF UTAH	Patterson, W. J.	MSFC	Andrade, J. D.	NAS 8-30253	3455
12	UNIV OF VERMONT	Young, R. S.	HQ-SL	Thanassi, J. W.	NSG 7021	3476
12	UNIV. WISC-MADISON	Holton, E. F.	ARC	Deluca, H. F.	NAS 2-8752	3670
12	UNIV WISC-MADISON	Redding, E. R.	HQ-P	Bock, R. M.	NGL 50-002-001	3686
12	VIRGINIA COMNWLTH U	Bell, V. L.	LARC	Stump, B. L.	NGR 47-002-041	3588
12	VIRGINIA POLY INST	Johnston, N. J.	LARC	Wolfe, J. F.	NSG 1064	3613
12	VIRGINIA POLY INST	Young, P. R.	LARC	Mason, J. G.	NSG 1085	3615
12	VIRGINIA POLY INST	Progar, D. J.	LARC	Wightman, J. P.	NSG 1124	3620
12	VIRGINIA POLY INST	Pellett, G. L.	LARC	Wightman, J. P.	NSG 1195	3623
12	WILBERFORCE UNIV	Serafini, T. T.	LERC	Stickney, P. B.	NSG 3067	3053
12	WORCESTER POLY INST	Quattrone, P. D.	ARC	Weiss, A. H.	NGR 22-017-024	2453
12	YALE UNIVERSITY	Snowden, L. O.	GSFC	Lamb, W. E., Jr.	NGL 07-004-035	1751
13	ALABAMA A&M UNIV	Kurtz, R. L.	MSFC	Lee, C. T.	NSG 8011	1007
13	ALABAMA A&M UNIV	Gross, K. W.	MSFC	Saha, H.	NSG 8022	1009
13	ARIZONA STATE UNIV	Lundholm, J. G.	HQ-RR	Parsons, S. B.	NSG 7019	1099
13	ATHENS COLLEGE	Jex, D. W.	MSFC	McNutt, R. C.	NAS 8-28058	1010
13	ATHENS COLLEGE	Zwiener, J. M.	MSFC	McNutt, R. C.	NAS 8-30561	1011
13	ATHENS COLLEGE	Linton, R. C.	MSFC	Short, W.	NAS 8-30813	1012
13	ATHENS COLLEGE	Moore, W. W., Jr.	MSFC	Martin, A. M., III	NAS 8-30880	1013
13	AUBURN UNIV-AUBURN	Jones, B. P.	MSFC	Vachon, R. I.	NAS 8-26579	1016
13	BROOKLYN COLLEGE	Wilson, J. W.	LARC	Franco, V.	NSG 1166	2738
13	BALL STATE UNIVERSTY	Hastings, L. J.	MSFC	Cosby, R. M.	NCA 8-101	2026
13	BALL STATE UNIVERSTY	Hastings, L. J.	MSFC	Cosby, R. M.	NCA 8-103	2027
13	BOWIE STATE COLLEGE	Caruso, A. J.	GSFC	Bhatia, M. S.	NGR 21-027-010	2192
13	BRIGHAM YOUNG UNIV	Hall, C. F.	ARC	Jones, D. E.	NAS 2-7358	3443
13	BRIGHAM YOUNG UNIV	Dyal, P.	ARC	Jones, D. E.	NGR 45-001-040	3447
13	BRIGHAM YOUNG UNIV	Roth, J. R.	LERC	Gardner, A. L.	NSG 3068	3448
13	BROWN UNIVERSITY	Walker, G. H.	LARC	Loferski, J. J.	NGR 40-002-093	3173
13	BRYN MAWR COLLEGE	Harris, J. W.	JSC	Crawford, M. L.	NSG 9005	3086
13	CALIF INST OF TECH	Davis, M. A.	GSFC	Stone, E. C.	NAS 5-11066	1186
13	CALIF INST OF TECH	Gallagher, W. F.	GSFC	Stone, E. C.	NAS 5-20721	1188
13	CALIF INST OF TECH	White, A.	GSFC	Zirin, H.	NAS 5-20997	1189
13	CALIF INST OF TECH	Harris, J. W.	JSC	Epstein, S.	NGL 05-002-190	1206
13	CALIF INST OF TECH	Harris, J. W.	JSC	Albee, A. L.	NGL 05-002-338	1209
13	CALIF INST OF TECH	Harris, J. W.	JSC	Tombrello, T. A.	NGR 05-002-333	1228
13	CALIF INST OF TECH	Timothy, A. F.	HQ-SG	Zirin, H.	NGR 05-002-345	1230
13	CARNEGIE-MELLON UNIV	Walker, G. H.	LARC	Milnes, A. G.	NGR 39-087-021	3090
13	CASE WESTERN RESERVE	McAvoy, N.	GSFC	Pao, Y. H.	NGR 36-027-068	2984
13	CATHOLIC UNIVERSITY	Dennis, B. R.	GSFC	Wernitz, C.	NSG 5066	1777
13	CATHOLIC UNIVERSITY	Deissler, R. G.	LERC	Ling, S. C.	NGR 09-005-076	1772
13	CATHOLIC UNIVERSITY	Berko, F. W.	HQ-SG	Whang, Y. C.	NGR 09-005-063	1771
13	CITY COLLEGE OF N Y	Byrns, Z. H.	JSC	Pierson, W. J.	NAS 9-13642	2743
13	CITY COLLEGE OF N Y	Putre, H.	LERC	Pfeffer, R.	NGL 33-013-029	2745
13	CITY COLLEGE OF N Y	Thom, K.	HQ-NS	Tchen, C. M.	NGL 33-013-034	2746
13	CLEVELAND STATE UNIV	Barile, S.	LERC	Casper, K.	NGL 36-025-001	2998
13	COLLEGE OF WM & MARY	Wilson, J. W.	LARC	Remler, E. A.	NAS 1-11808	3480
13	COLLEGE OF WM & MARY	Breckenridge, R. A.	LARC	Moriarity, J. A.	NSG 1089	3486
13	COLLEGE OF WM & MARY	Breckenridge, R. A.	LARC	Sher, A.	NSG 1173	3488
13	COLORADO STATE UNIV	Zill, L. P.	ARC	She, C. Y.	NCA 2-65503	1672
13	COLORADO STATE UNIV	Danilowicz, R. L.	LERC	Etters, R. D.	NGR 06-002-159	1682
13	COLORADO STATE UNIV	Chubb, D. L.	LERC	Collins, G. J.	NSG 3060	1689
13	COLUMBIA UNIVERSITY	Harris, J. W.	JSC	Horai, K.	NGR 33-008-169	2770
13	COLUMBIA UNIVERSITY	Harris, J. W.	JSC	Horai, K.	NGR 33-008-177	2771
13	CORNELL UNIVERSITY	Findlay, J. A.	GSFC	Walker, J. C.	NAS 5-20705	2788
13	CORNELL UNIVERSITY	Conrath, B. J.	GSFC	Gierasch, P. J.	NAS 5-23236	2790
13	CORNELL UNIVERSITY	Harris, J. W.	JSC	Gold, T.	NGR 33-010-137	2807
13	CORNELL UNIVERSITY	Brown, G. V.	LERC	Krumhansl, J. A.	NGR 33-010-188	2815
13	CORNELL UNIVERSITY	Berko, F. W.	HQ-SG	Walker, J. C.	NSG 7104	2824

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13	CORNELL UNIVERSITY	Berko, F. W.	HQ-SG	Auer, P. L.	NSG 7135	2826
13	CORNELL UNIVERSITY	Cauffman, D. P.	HQ-SL	Farley, D. T.	NGR 33-010-161	2810
13	DARTMOUTH COLLEGE	Berko, F. W.	HQ-SG	Sonnerup, B. U.	NGR 30-001-040	2627
13	DARTMOUTH COLLEGE	Berko, F. W.	HQ-SG	Laaspere, T.	NGR 30-001-041	2628
13	DELAWARE STATE COL	Aikin, A. C.	GSFC	Helmy, E. M.	NGR 08-002-005	1761
13	DELAWARE STATE COL	Pohly, J. G.	HQ-P	Helmy, E. M.	NGR 08-002-001	1759
13	DUKE UNIVERSITY	Harris, J. W.	JSC	Cocks, F. H.	NGR 34-001-054	2935
13	FAIRLEIGH-DICKNSON U	Harris, J. W.	JSC	Adams, J. B.	NGL 31-006-011	2642
13	FEDERAL CITY COLLEGE	McDonald, F. B.	GSFC	Whiteside, H.	NGR 09-050-001	1780
13	FISK UNIVERSITY	Kroes, R. L.	MSFC	Silberman, E.	NGR 43-021-002	3197
13	FISK UNIVERSITY	Parnell, T. A.	MSFC	Neugebauer, G.	NSG 8007	3198
13	FLORIDA A&M UNIV	Trajmar, S.	JPL	Jones, H. W.	NSG 901	1830
13	FLORIDA INST OF TECH	Langel, R. A.	GSFC	Jin, R. S.	NSG 5038	1834
13	FLORIDA STATE UNIV	Hardin, J. C.	LARC	Tam, C. K.	NSG 1021	1838
13	GEORGIA INST OF TECH	Posey, J. W.	LARC	Hadden, W. J., Jr.	NSG 1047	1912
13	GEORGIA INST OF TECH	Hohl, F.	LARC	Williams, J. R.	NSG 1168	1913
13	GEORGIA INST OF TECH	Huff, R. G.	LERC	Strahle, W. C.	NSG 3015	1917
13	GEORGIA INST OF TECH	Smith, O. E.	MSFC	Justus, C. G.	NAS 8-29753	1891
13	GEORGIA INST OF TECH	Kerr, J. H.	MSFC	Callen, W. R.	NAS 8-30246	1893
13	GEORGIA INST OF TECH	Kerr, J. H.	MSFC	Callen, W. R.	NAS 8-31193	1899
13	GEORGIA INST OF TECH	Kerr, J. H.	MSFC	Walsh, J. R.	NAS 8-31344	1900
13	GEORGIA INST OF TECH	Thom, K.	HQ-RR	Williams, R.	NSG 7067	1921
13	GRAMBLING STATE UNIV	Hoffman, R. A.	JSC	Foster, B. R.	NSG 9014	2161
13	GRAMBLING STATE UNIV	Kroes, R. L.	MSFC	Murty, A. N.	NGR 19-011-016	2160
13	GRAMBLING STATE UNIV	Pohly, J. G.	HQ-P	Terrell, J.	NGR 19-011-009	2158
13	GRAMBLING STATE UNIV	Berko, F. W.	HQ-SG	Cummings, W. D.	NGR 19-011-007	2157
13	HAMPTON INSTITUTE	Singh, J. J.	LARC	Han, K. S.	NGR 47-020-008	3496
13	HAMPTON INSTITUTE	Pohly, J. G.	HQ-P	Hunter, C. E.	NGR 47-020-005	3494
13	HARVARD UNIVERSITY	McAvoy, N.	GSFC	Bloembergen, N.	NGL 22-007-117	2309
13	HARVARD UNIVERSITY	Snoddy, W. C.	MSFC	Vaiana, G. S.	NAS 8-31374	2305
13	HARVARD UNIVERSITY	Jordan, S. D.	HQ-SG	Parkinson, W. H.	NGL 22-007-006	2307
13	HOUSTON BAPTIST UNIV	Potter, A. E.	JSC	Modisette, J. L.	NSG 9007	3261
13	HOWARD UNIVERSITY	Okeefe, J. A.	GSFC	Thorpe, A. N.	NGL 09-011-006	1808
13	HOWARD UNIVERSITY	Mental!, J. E.	GSFC	Thorpe, A. N.	NGR 09-011-004	1811
13	HOWARD UNIVERSITY	Yin, L. I.	GSFC	Tsang, T.	NGR 09-011-057	1816
13	ILL INST OF TECH	Thom, K.	HQ-RR	Weinstein, H.	NSG 7039	1958
13	JOHNS HOPKINS UNIV	Hardee, S. N.	JSC	Fastie, W. G.	NAS 9-11528	2205
13	JOHNS HOPKINS UNIV	Harris, J. W.	JSC	Henry, R. C.	NSG 9004	2215
13	JOHNS HOPKINS UNIV	Berko, F. W.	HQ-SG	Krimigis, S. M.	NSG 7055	2214
13	KENT STATE UNIV	Brown, G. V.	LERC	Johnson, D. L.	NGR 36-007-027	3001
13	LEHIGH UNIVERSITY	Harris, J. W.	JSC	Sclar, C. B.	NGR 39-007-064	3104
13	LA STATE U-BAT ROUGE	Ormes, J. F.	GSFC	Huggett, R. W.	NAS 5-20883	2162
13	LA STATE U-BAT ROUGE	Hamby, H. G.	MSFC	Farmer, R. C.	NAS 8-30380	2164
13	MASS INST OF TECH	Davis, M. A.	GSFC	Bridge, H. S.	NAS 5-11062	2336
13	MASS INST OF TECH	McAvoy, N. A.	GSFC	Javan, A.	NGR 22-009-741	2396
13	MASS INST OF TECH	Harris, J. W.	JSC	Simmons, M. G.	NGR 22-009-540	2381
13	MASS INST OF TECH	Weinberg, I.	LERC	Gatos, H. C.	NSG 3017	2422
13	MASS INST OF TECH	Decker, R.	MSFC	Boyd, P.	NAS 8-30301	2346
13	MASS INST OF TECH	Dalins, I.	MSFC	Gatos, H. C.	NGL 22-009-125	2364
13	MASS INST OF TECH	Hall, H.	HQ-MT	Chapman, P. K.	NGR 22-009-735	2395
13	MASS INST OF TECH	Schmerling, E. R.	HQ-SG	Bridge, H. S.	NGL 22-009-015	2359
13	MASS INST OF TECH	Opp, A. G.	HQ-SG	Clark, G. W.	NGR 22-009-785	2400
13	MASS INST OF TECH	Berko, F. W.	HQ-SG	Bridge, H. S.	NGR 22-009-786	2401
13	MICHIGAN STATE UNIV	Forbes, C. D.	JSC	Manderscheid, L.	NAS 9-13332	2455
13	MICHIGAN STATE UNIV	Unavailable	LARC	Unavailable	NAS 1-6860	2454
13	MISSISSIPPI STATE U	Hollis, B. R., Jr.	MSFC	Gassaway, J. D.	NAS 8-26749	2562
13	MOREHOUSE COLLEGE	Shriver, E. L.	MSFC	Spight, C.	NSG 8014	1927
13	MOREHOUSE COLLEGE	Stone, N. H.	MSFC	Turner, J. M.	NSG 8020	1928

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13	MOREHOUSE COLLEGE	Pohly, J. G.	HQ-P	Spight, C.	NGR 11-008-002	1925
13	NEW MEX ST U-LAS CR	Salzman, J. A.	LERC	Armstrong, R. L.	NSG 3069	2712
13	NEW YORK UNIVERSITY	Schneck, P. B.	GSFC	Schwartz, J. T.	NSG 5032	2848
13	NEW YORK UNIVERSITY	Rosendahl, J. D.	HQ-SG	Glassgold, A. E.	NGR 33-016-196	2843
13	NO CAR A&T STATE U	Fripp, A. L.	LARC	Williams, L., Jr.	NGR 34-012-004	2940
13	NO CAR A&T STATE U	Allario, F.	LARC	Yu, C.	NSG 1147	2943
13	NO CAROLINA STATE U	Gross, C.	LARC	Benson, R. B.	NGR 34-002-117	2950
13	NO CAROLINA STATE U	Hohl, F.	LARC	Hassan, H. A.	NSG 1058	2958
13	NO CAROLINA STATE U	Miller, W. E.	LARC	Littlejohn, M. A.	NSG 1202	2964
13	NO CAROLINA STATE U	Mayes, W. H.	LARC	Hart, F. D.	NSG 1205	2965
13	NO CAROLINA STATE U	Thom, K.	HQ-RR	Hassan, H. A.	NGR 34-002-177	2952
13	NO CAROLINA STATE U	Thom, K.	HQ-NS	Bennett, W. H.	NGL 34-002-017	2946
13	NTHWSTN ST COL-OKLA	Singh, J. J.	LARC	Brown, K. H.	NSG 1134	3057
13	NORTHWESTERN UNIV	Lad, R. A.	LERC	Waber, J. T.	NGL 14-007-081	1964
13	NORTHWESTERN UNIV	Behrendt, D. R.	LERC	Waber, J. T.	NGR 14-007-131	1968
13	OHIO UNIVERSITY	Bonavito, N.	GSFC	Tanuka, T.	NAS 5-20885	3023
13	OLD DOMINION UNIV	Hillard, M. E., Jr.	LARC	Bandy, A. R.	NAS 1-13820	3508
13	OLD DOMINION UNIV	Outlaw, R. A.	LARC	Brock, F. J.	NGR 47-003-043	3514
13	OLD DOMINION UNIV	Phillips, D. H.	LARC	Ake, R. L.	NGR 47-003-048	3515
13	OLD DOMINION UNIV	Outlaw, R. A.	LARC	Cox, J. L.	NGR 47-003-077	3518
13	OLD DOMINION UNIV	Wilson, J. W.	LARC	Khandelwal, G. S.	NGR 47-003-078	3519
13	OLD DOMINION UNIV	Hohl, F.	LARC	Harries, W. L.	NSG 1022	3525
13	OREGON STATE UNIV	Harris, J. W.	JSC	Schmitt, R. A.	NGL 38-002-039	3076
13	PAINE COLLEGE	Bannister, T. C.	MSFC	Miller, J. E.	NSG 8002	1931
13	PENNSYLVANIA STATE U	Schmerling, E. R.	HQ-SG	Ross, W. J.	NGL 39-009-002	3118
13	PENNSYLVANIA STATE U	Berko, F. W.	HQ-SG	Nisbet, J. S.	NGL 39-009-003	3119
13	PENNSYLVANIA STATE U	Berko, F. W.	HQ-SG	Kendall, B. R.	NGL 39-009-032	3123
13	PENNSYLVANIA STATE U	Berko, F. W.	HQ-SG	Hale, L. C.	NGR 39-009-218	3130
13	POLY INST OF NY	Cauffman, D. P.	HQ-SG	Gross, S. H.	NGR 33-006-047	2855
13	PRINCETON UNIVERSITY	Hunter, W. W.	LARC	Greaux, A. E.	NSG 1070	2677
13	PRINCETON UNIVERSITY	Thom, K.	HQ-RR	Layton, J. P.	NGR 31-001-328	2676
13	PRINCETON UNIVERSITY	Strickland, A. T.	HQ-SM	Dicke, R. H.	NGR 31-001-202	2665
13	PURDUE UNIVERSITY	Harris, J. W.	JSC	Taylor, L. A.	NGL 15-005-175	2052
13	PURDUE UNIVERSITY	Harris, J. W.	JSC	Meyer, H. O.	NGR 15-005-157	2057
13	RENSELAER POLY-NY	Reinmann, J. J.	LERC	Hickok, R. L.	NSG 3057	2877
13	RICE UNIVERSITY	Taylor, H. A., Jr.	GSFC	Cloutier, P. A.	NAS 5-23338	3271
13	RICE UNIVERSITY	Eichelman, W. F.	JSC	Freeman, J. W.	NAS 9-5911	3273
13	RICE UNIVERSITY	Hudson, R. D.	JSC	Stebbins, R. F.	NGR 44-006-156	3284
13	RICE UNIVERSITY	Outlaw, R. A.	LARC	Stebbins, R. F.	NSG 1017	3285
13	RICE UNIVERSITY	Lad, R. A.	LERC	Rorschach, H. E.	NGL 44-006-001	3279
13	RICE UNIVERSITY	Berko, F. W.	HQ-SG	Michel, F. C.	NGL 44-006-012	3280
13	RICE UNIVERSITY	Berko, F. W.	HQ-SG	Dessler, A. J.	NGR 44-006-137	3282
13	RUTGERS UNIV-NEWARK	Dubin, M.	HQ-SG	Carroll, B.	NGR 31-004-049	2692
13	SAN FRAN STATE UNIV	Zill, L. P.	ARC	Plachy, W. Z.	NCA 2-60505	1277
13	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Anderson, D.	NCA 2-75514	1294
13	SO CAROLINA ST COL	Urban, E. W.	MSFC	Payne, J. E.	NSG 8021	3187
13	SO UNIV-BATON ROUGE	Unavailable	MSFC	Scott, R. L.	NSG 8016	2174
13	STANFORD UNIVERSITY	Zill, L. P.	ARC	Bershader, D.	NCA 2-45502	1325
13	STANFORD UNIVERSITY	Hickey, D. H.	ARC	Karamcheti, K.	NGR 05-020-676	1379
13	STANFORD UNIVERSITY	Billman, K. W.	ARC	Bershader, D.	NSG 2035	1393
13	STANFORD UNIVERSITY	Billman, K. W.	ARC	Mitchner, M.	NSG 2050	1395
13	STANFORD UNIVERSITY	Davis, M. A.	GSFC	Helliwell, R. A.	NAS 5-20871	1313
13	STANFORD UNIVERSITY	Hutchby, J. A.	LARC	Pearson, G. L.	NSG 1201	1388
13	STANFORD UNIVERSITY	Urban, E. W.	MSFC	Everitt, C. W.	NGR 05-020-019	1360
13	STANFORD UNIVERSITY	Thom, K.	HQ-RR	Pantell, R. H.	NSG 7042	1402
13	STANFORD UNIVERSITY	Thom, K.	HQ-RR	Unavailable	NSG 7110	1405
13	STANFORD UNIVERSITY	Weinberg, I.	HQ-RW	Little, W. A.	NGL 05-020-242	1351
13	STANFORD UNIVERSITY	Berko, F. W.	HQ-SG	Helliwell, R. A.	NGL 05-020-008	1345

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13	STANFORD UNIVERSITY	Berko, F. W.	HQ-SG	Crawford, F. W.	NGL 05-020-176	1349
13	STANFORD UNIVERSITY	Timothy, A. F.	HQ-SG	Sturrock, P. A.	NGL 05-020-272	1353
13	STANFORD UNIVERSITY	Berko, F. W.	HQ-SG	Da Rosa, A. V.	NGR 05-020-001	1358
13	STATE UNIV NY-ALBANY	Gary, G. A.	MSFC	Weinberg, J. L.	NAS 8-30251	2882
13	STATE UNIV NY-BUFFAL	Allen, R. E.	MSFC	Bigazzi, P. E.	NAS 8-29745	2887
13	STATE UNIV NY-BUFFAL	Lundholm, J. G.	HQ-RR	Shaw, D. T.	NSG 7071	2894
13	STATE U NY-STONY BRK	Mangus, J. D.	GSFC	Stroke, G. W.	NGR 33-015-196	2909
13	STATE U NY-STONY BRK	Harris, J. W.	JSC	Papike, J. J.	NGL 33-015-130	2897
13	STATE U NY-STONY BRK	Weldon, J. M.	HQ-SG	Stroke, G. W.	NGR 33-015-068	2899
13	TALLADEGA COLLEGE	Dalins, I.	MSFC	Breecher, J.	NGR 01-007-009	1032
13	TENNESSEE STATE UNIV	Cassidy, J. F.	LERC	Busby, M. R.	NGR 43-014-002	3202
13	TENNESSEE TECH U	Hardesty, C. A.	LARC	McLennan, W. D.	NGR 43-003-012	3208
13	TEXAS A&M UNIVERSITY	Clark, R. S.	JSC	Randall, J.	NAS 9-14429	3312
13	TEXAS A&M UNIVERSITY	Nowakowski, M. F.	MSFC	Porter, W. A.	NAS 8-29851	3305
13	TULANE UNIVERSITY	Weinberg, I.	HQ-RW	Hermann, A. M.	NGL 19-002-027	2182
13	UNION COLLEGE	McAvoy, N.	GSFC	Galantowicz, A.	NGR 33-032-004	2921
13	UNIV OF AKRON	Golub, M. A.	ARC	Gent, A. N.	NSG 2061	3025
13	UNIV ALA-HUNTSVILLE	Parnell, T. A.	MSFC	Gregory, J. C.	NAS 8-24953	1041
13	UNIV ALA-HUNTSVILLE	Hagyard, M. J.	MSFC	Wu, S. T.	NAS 8-28097	1044
13	UNIV ALA-HUNTSVILLE	Swenson, G. R.	MSFC	Wu, S. T.	NAS 8-29543	1050
13	UNIV ALA-HUNTSVILLE	Zwiener, J. M.	MSFC	Walter, H. U.	NAS 8-29650	1051
13	UNIV ALA-HUNTSVILLE	Urban, E. W.	MSFC	Otto, G. H.	NAS 8-30244	1053
13	UNIV ALA-HUNTSVILLE	Chappell, C. R.	MSFC	Sung, C. C.	NAS 8-30563	1056
13	UNIV ALA-HUNTSVILLE	Parnell, T. A.	MSFC	Gregory, J. C.	NAS 8-31170	1063
13	UNIV ALA-HUNTSVILLE	Teuber, D. L.	MSFC	Knezovich, F. M.	NAS 8-31194	1066
13	UNIV ALA-HUNTSVILLE	Bowden, D. R.	MSFC	Christensen, D. L.	NAS 8-31293	1067
13	UNIV ALA-TUSCALOOSA	Bannister, T. C.	MSFC	Miyagawa, I.	NAS 8-28098	1075
13	UNIV ALA-TUSCALOOSA	Schafer, C. F.	MSFC	De Smet, D. J.	NAS 8-29494	1077
13	UNIV ALA-TUSCALOOSA	Moore, W. W., Jr.	MSFC	Liu, H. K.	NAS 8-30479	1080
13	UNIV ALASKA-FAIRBNKS	Berko, F. W.	HQ-SG	Davis, T. N.	NGR 02-001-087	1093
13	UNIV ALASKA-FAIRBNKS	Berko, F. W.	HQ-SG	Akasofu, S. I.	NSG 7051	1096
13	UNIV OF ARIZONA	Hall, C. F.	ARC	Sonett, C. P.	NAS 2-7839	1104
13	UNIV OF ARIZONA	Zill, L. P.	ARC	Caroff, L. J.	NCA 2-40601	1127
13	UNIV OF ARIZONA	Meese, K. J.	GSFC	L'Heureux, J. J.	NAS 5-11444	1107
13	UNIV OF ARIZONA	McAvoy, N. A.	GSFC	Lamb, W. E., Jr.	NSG 5022	1161
13	UNIV OF ARIZONA	Griner, D. B.	MSFC	Tifft, W. G.	NAS 8-27804	1112
13	UNIV OF ARIZONA	Wyman, C. L.	MSFC	Shack, R. V.	NAS 8-27863	1113
13	UNIV OF ARIZONA	Kurtz, R. L.	MSFC	Jacobs, S. F.	NAS 8-28661	1114
13	UNIV OF ARIZONA	Allen, R. E.	MSFC	Bier, M.	NAS 8-29566	1115
13	UNIV OF ARIZONA	Berko, F. W.	HQ-SG	Fan, C. Y.	NGR 03-002-107	1142
13	UNIV OF ARIZONA	Berko, F. W.	HQ-SG	Sonett, C. P.	NSG 7024	1168
13	U ARKANSAS-MONTICELLO	Hardee, S. N.	JSC	Dehon, R. A.	NAS 9-13196	1180
13	UNIV CALIF-BERKELEY	Davis, M. A.	GSFC	Anderson, K. A.	NAS 5-20079	1409
13	UNIV CALIF-BERKELEY	Davis, M. A.	GSFC	Mozer, F. S.	NAS 5-20080	1410
13	UNIV CALIF-BERKELEY	Davis, M. A.	GSFC	Anderson, K. A.	NAS 5-20838	1411
13	UNIV CALIF-BERKELEY	Gallagher, W. F.	GSFC	Heckman, H. H.	NAS 5-20995	1413
13	UNIV CALIF-BERKELEY	Harris, J. W.	JSC	Reynolds, J. H.	NGL 05-003-409	1440
13	UNIV CALIF-BERKELEY	Harris, J. W.	JSC	Burlingame, A. L.	NGR 05-003-435	1448
13	UNIV CALIF-BERKELEY	Ondrak, B. T.	MSFC	Price, P. B.	NAS 8-29603	1416
13	UNIV CALIF-BERKELEY	Berko, F. W.	HQ-SG	Mozer, F. S.	NGR 05-003-239	1443
13	UNIV CALIF-BERKELEY	Kavanagh, L. D., Jr.	HQ-SG	Mozer, F. S.	NGR 05-003-480	1455
13	UNIV CALIF-L ANGELES	Davis, M. A.	GSFC	Russell, C. T.	NAS 5-20064	1497
13	UNIV CALIF-L ANGELES	Hardee, S. N.	JSC	Ukanwa, A. O.	NAS 9-12757	1504
13	UNIV CALIF-L ANGELES	Harris, J. W.	JSC	Wetherill, G. W.	NGL 05-007-287	1518
13	UNIV CALIF-L ANGELES	Harris, J. W.	JSC	Warren, N.	NGL 05-007-330	1519
13	UNIV CALIF-L ANGELES	Harris, J. W.	JSC	Kaplan, I. R.	NGR 05-007-289	1527
13	UNIV CALIF-L ANGELES	Keating, G. M.	LARC	Knuth, E. L.	NGR 05-007-416	1538
13	UNIV CALIF-L ANGELES	Berko, F. W.	HQ-SG	Holzer, R. E.	NGR 05-007-276	1525

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13	UNIV CALIF-L ANGELES	Berko, F. W.	HQ-SG	Russell, C. T.	NSG 7008	1549
13	UNIV CALIF-RIVERSIDE	Temkin, A.	GSFC	Poe, R. T.	NGL 05-008-005	1552
13	UNIV CALIF-SAN DIEGO	Wales, R. O.	GSFC	McIlwain, C. E.	NAS 5-21055	1557
13	UNIV CALIF-SAN DIEGO	Shulman, A. R.	GSFC	Lee, S. H.	NGR 05-009-260	1591
13	UNIV CALIF-SAN DIEGO	Harris, J. W.	JSC	Arrhenius, G. O.	NGL 05-009-154	1571
13	UNIV CALIF-SAN DIEGO	Chappell, C. R.	MSFC	McIlwain, C. E.	NAS 8-31145	1561
13	UNIV CALIF-SAN DIEGO	Opp, A. G.	HQ-SG	Peterson, L. E.	NGL 05-005-003	1562
13	UNIV CALIF-SAN DIEGO	Berko, F. W.	HQ-SG	McIlwain, C. E.	NGL 05-005-007	1564
13	UNIV CALIF-SAN DIEGO	Berko, F. W.	HQ-SG	Banks, P. M.	NGR 05-009-075	1575
13	UNIV CALIF-SAN DIEGO	Berko, F. W.	HQ-SG	Fejer, J. A.	NGR 05-009-076	1576
13	UNIV CALIF-SAN DIEGO	Schmerling, E. R.	HQ-SG	Axford, W. I.	NGR 05-009-081	1577
13	UNIV CALIF-SAN DIEGO	Jordan, S. D.	HQ-SG	Hudson, H. S.	NSG 7100	1598
13	UNIV OF CHICAGO	Meese, K. J.	GSFC	Meyer, P.	NAS 5-9096	1975
13	UNIV OF CHICAGO	Davis, M. A.	GSFC	Sharp, J. D.	NAS 5-11067	1976
13	UNIV OF CHICAGO	Gallagher, W. F.	GSFC	Meyer, P.	NAS 5-20674	1977
13	UNIV OF CHICAGO	Harris, J. W.	JSC	Anders, E.	NGL 14-001-167	1986
13	UNIV OF CHICAGO	Harris, J. W.	JSC	Smith, J. V.	NGL 14-001-171	1988
13	UNIV OF CHICAGO	Dwornik, S. E.	HQ-SL	Turkevich, A. L.	NGR 14-001-250	2000
13	UNIV OF CINCINNATI	Brown, G. V.	LERC	Joiner, W. C.	NGR 36-004-054	3027
13	UNIV COLORADO-BOLDR	Harris, J. W.	JSC	Larson, E. E.	NGR 06-003-181	1711
13	UNIV COLORADO-BOLDR	Hutchby, J. A.	LARC	Chernow, F.	NGR 06-003-205	1714
13	UNIV COLORADO-BOLDR	Bass, B.	MSFC	Dulk, G. A.	NAS 8-31378	1701
13	UNIV COLORADO-BOLDR	Jordan, S. D.	HQ-SG	Reethof, G.	NASR 86	1702
13	UNIV COLORADO-BOLDR	Jordan, S. D.	HQ-SG	Linsky, J. L.	NGL 06-003-057	1704
13	UNIV COLORADO-BOLDR	Calahan, H. D.	HQ-SG	Speiser, T. W.	NGR 06-003-215	1716
13	UNIV COLORADO-BOLDR	Jordan, S. D.	HQ-SG	Bruner, E. C.	NSG 7130	1728
13	UNIV OF DELAWARE	Harris, J. W.	JSC	Glass, B. P.	NGR 08-001-029	1765
13	UNIV OF DENVER	Munoz, R. M.	ARC	Murcray, D. G.	NAS 2-8200	1730
13	UNIV OF DENVER	Hobbs, R. W.	GSFC	Edrich, J.	NAS 5-23190	1731
13	UNIV OF DENVER	Berko, F. W.	HQ-SG	Patel, V. L.	NGR 06-004-058	1734
13	UNIV OF DENVER	Berko, F. W.	HQ-SG	Roederer, J. G.	NGR 06-004-060	1735
13	UNIV OF DENVER	Calahan, H. D.	HQ-SG	Patel, V. L.	NGR 06-004-123	1736
13	UNIV OF FLORIDA	Thom, K.	HQ-RR	Schneider, R. T.	NGL 10-005-089	1852
13	UNIV OF GEORGIA	Clingman, J. H.	MSFC	Burkhard, D. G.	NAS 8-31565	1934
13	UNIV OF HAWAII	Jordan, S. D.	HQ-SG	McAllister, H. C.	NASR 5	1942
13	UNIV OF HOUSTON	Allen, J. P.	JSC	Eisner, M.	NAS 9-14316	3340
13	UNIV OF HOUSTON	Bailey, J. V.	JSC	Pinsky, L. S.	NAS 9-14652	3348
13	UNIV OF HOUSTON	Golden, R. L.	JSC	Goodman, C.	NGL 44-005-041	3352
13	UNIV OF HOUSTON	White, D. R.	JSC	Hildebrandt, A. F.	NGR 44-005-137	3360
13	UNIV ILLINOIS-URBANA	Hohl, F.	LARC	Milev, G. H.	NSG 1063	2019
13	UNIV ILLINOIS-URBANA	Dunning, J. W., Jr.	LERC	Verdeyen, J. T.	NGR 14-005-200	2016
13	UNIV ILLINOIS-URBANA	Siewert, R. D.	LERC	Strehlow, R. A.	NSG 3008	2020
13	UNIV OF IOWA	Davis, M. A.	GSFC	Frank, L. A.	NAS 5-11039	2088
13	UNIV OF IOWA	Davis, M. A.	GSFC	Frank, L. A.	NAS 5-11064	2089
13	UNIV OF IOWA	Denwiddie, M.	GSFC	Gurnett, D. A.	NAS 5-11167	2091
13	UNIV OF IOWA	Eaker, H. L.	GSFC	Frank, L. A.	NAS 5-11265	2092
13	UNIV OF IOWA	Davis, M. A.	GSFC	Gurnett, D. A.	NAS 5-20093	2095
13	UNIV OF IOWA	Davis, M. A.	GSFC	Frank, L. A.	NAS 5-20094	2096
13	UNIV OF IOWA	Coffee, C. W., Jr.	LARC	Van Allen, J. A.	NAS 1-13129	2086
13	UNIV OF IOWA	Berko, F. W.	HQ-SG	Van Allen, J. A.	NGL 16-001-002	2100
13	UNIV OF IOWA	Berko, F. W.	HQ-SG	Montgomery, D. C.	NGL 16-001-043	2101
13	UNIV OF KENTUCKY	Harris, J. W.	JSC	Ehmann, W. D.	NGR 18-001-058	2146
13	UNIV OF KENTUCKY	Haggard, J. B., Jr.	LERC	Hsu, N. N.	NGR 18-001-083	2148
13	UNIV MARYLAND-COL PK	Davis, M. A.	GSFC	Gloeckler, G.	NAS 5-11063	2220
13	UNIV MARYLAND-COL PK	Davis, M. A.	GSFC	Gloeckler, G.	NAS 5-20062	2221
13	UNIV MARYLAND-COL PK	Conrath, B. J.	GSFC	Ponnampuruma, C. A.	NAS 5-23237	2224
13	UNIV MARYLAND-COL PK	Ogilvie, K. W.	GSFC	Coplan, M. A.	NGR 21-002-291	2245
13	UNIV MARYLAND-COL PK	Teegarden, B. J.	GSFC	Gloeckler, G.	NGR 21-002-316	2249

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13	UNIV MARYLAND-COL PK	Rosenbaum, B.	GSFC	Richard, J. P.	NGR 21-002-412	2262
13	UNIV MARYLAND-COL PK	Buften, J. L.	GSFC	Currie, D. G.	NGR 21-002-444	2266
13	UNIV MARYLAND-COL PK	Simoneau, R. J.	LERC	Sengers, J. V.	NGR 21-002-344	2251
13	UNIV MARYLAND-COL PK	Coles, W. D.	LERC	Spain, I. L.	NGR 21-002-400	2260
13	UNIV MARYLAND-COL PK	Hoge, F. E.	WFC	Alley, C. O.	NGR 21-002-435	2265
13	UNIV MARYLAND-COL PK	Redfield, M.	HQ-MT	Alley, C. O.	NGR 21-002-285	2244
13	UNIV MARYLAND-COL PK	Gessow, A.	HQ-RA	Melnik, W. L.	NGR 21-002-303	2248
13	UNIV MARYLAND-COL PK	Strickland, A. T.	HQ-SM	Currie, D. G.	NGR 21-002-267	2242
13	UNIV MD-EASTRN SHORE	Kim, H. H.	WFC	Singh, G.	NGR 21-119-003	2288
13	UNIV OF MASS-AMHERST	Harris, J. W.	JSC	Haggerty, S. E.	NGL 22-010-089	2446
13	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-11073	2463
13	UNIV MICH-ANN ARBOR	Davis, M. A.	GSFC	Haddock, F. T.	NAS 5-20839	2470
13	UNIV MICH-ANN ARBOR	Unavailable	GSFC	Unavailable	NAS 5-20939	2471
13	UNIV MICH-ANN ARBOR	Devries, L. L.	MSFC	Cicerone, R. J.	NAS 8-28294	2477
13	UNIV MICH-ANN ARBOR	Berko, F. W.	HQ-SG	Samir, U.	NGR 23-005-320	2488
13	UNIV MICH-ANN ARBOR	Berko, F. W.	HQ-SG	Sharp, W. E.	NGR 23-005-360	2489
13	UNIV MICH-ANN ARBOR	Timothy, A. F.	HQ-SG	Haddock, F. T.	NSG 7004	2508
13	U MINN-MNPLS-ST PAUL	Staff, W. O.	GSFC	Epney, O.	NAS 5-3838	2524
13	U MINN-MNPLS-ST PAUL	Davis, M. A.	GSFC	Kellogg, P. J.	NAS 5-20837	2529
13	U MINN-MNPLS-ST PAUL	Harris, J. W.	JSC	Pepin, R. O.	NGL 24-005-225	2536
13	U MINN-MNPLS-ST PAUL	Harris, J. W.	JSC	Murthy, V. R.	NGR 24-005-223	2541
13	U MINN-MNPLS-ST PAUL	Weigand, A. J.	LARC	Wehner, G. K.	NSG 3041	2548
13	U MINN-MNPLS-ST PAUL	Roberts, W. T.	MSFC	Winckler, J. R.	NAS 8-31510	2531
13	U MINN-MNPLS-ST PAUL	Cauuffman, D. P.	HQ-SG	Winckler, J. R.	NGL 24-005-008	2533
13	U MINN-MNPLS-ST PAUL	Kavanagh, L. D., Jr.	HQ-SG	Winckler, J. R.	NGR 24-005-111	2539
13	U MINN-MNPLS-ST PAUL	Kavanagh, L. D., Jr.	HQ-SG	Cahill, L. J., Jr.	NGR 24-005-253	2543
13	U MINN-MNPLS-ST PAUL	Kavanagh, L. D., Jr.	HQ-SG	Winckler, J. R.	NSG 7005	2549
13	UNIV MO-ROLLA	Smi, R. E.	MSFC	Stampfer, J. F., Jr.	NAS 8-31538	2591
13	UNIV NEBRASKA-LINCLN	Kalet, M. W.	GSFC	Samson, J. A.	NAS 5-23125	2615
13	UNIV NEW HAMPSHIRE	Trombka, J. I.	GSFC	Chupp, E. L.	NAS 5-20714	2633
13	UNIV NEW HAMPSHIRE	Orwig, L. E.	GSFC	Chupp, E. L.	NAS 5-20884	2634
13	UNIV NEW HAMPSHIRE	Jordan, S. D.	HQ-SG	Chupp, E. L.	NGL 30-002-018	2636
13	UNIV NEW HAMPSHIRE	Berko, F. W.	HQ-SG	Arnoldy, R. L.	NGR 30-002-054	2639
13	UNIV NEW HAMPSHIRE	Timothy, A. F.	HQ-SG	Chupp, E. L.	NGR 30-002-104	2640
13	UNIV OF NEW MEXICO	Kirkpatrick, J. P.	ARC	Feldman,, K. T., Jr.	NSG 2064	2735
13	UNIV OF NEW MEXICO	Temkin, A.	GSFC	Beckel, C. L.	NCA 5-41	2724
13	UNIV OF NEW MEXICO	Calahan, H. D.	HQ-SG	Ahluwalia, H. S.	NGR 32-004-086	2732
13	UNIV N CAR-CHPL HILL	Parnell, T. A.	MSFC	Childs, C. B.	NAS 8-26601	2968
13	UNIV OREGON-EUGENE	Whiting, E. E.	ARC	Crasemann, B.	NGR 38-003-036	3082
13	UNIV OREGON-EUGENE	Harris, J. W.	JSC	Weill, D. F.	NGL 38-003-022	3079
13	UNIV OF PENNSYLVANIA	Cohn, E. M.	HQ-RP	Unavailable	NGL 39-010-001	3144
13	UNIV OF PITTSBURGH	Temkin, A.	GSFC	Gerjuoy, E.	NGL 39-011-035	3155
13	UNIV OF PITTSBURGH	Eichelman, W. F.	JSC	Donahue, T. M.	NAS 9-13803	3150
13	UNIV OF PITTSBURGH	Harris, J. W.	JSC	Fuller, M.	NGL 39-011-160	3157
13	UNIV OF ROCHESTER	Osantowski, J. F.	GSFC	Baumeister, P. W.	NAS 5-20028	2922
13	UNIV SAN FRANCISCO	Taketa, S. T.	ARC	Benton, E. V.	NAS 2-7059	1613
13	UNIV SAN FRANCISCO	Parnell, T. A.	MSFC	Benton, E. V.	NAS 8-26758	1614
13	UNIV OF SANTA CLARA	Dyal, P.	ARC	Parkin, C. W.	NSG 2075	1640
13	UNIV OF SO ALABAMA	Fordyce, J. S.	LERC	Weber, F. N., Jr.	NSG 3003	1085
13	UNIV OF SOUTHERN CAL	Unavailable	JSC	Unavailable	NAS 9-6164	1648
13	UNIV OF SOUTHERN CAL	Ruff, R. C.	MSFC	Wilcox, W. R.	NAS 8-29847	1647
13	UNIV OF SOUTHERN CAL	Berko, F. W.	HQ-SG	Intriligator, D. S.	NGR 05-018-181	1655
13	UNIV OF SOUTHERN CAL	Calahan, H. D.	HQ-SG	Intriligator, D. S.	NGR 05-018-185	1656
13	UNIV SOUTHWESTERN LA	Chubb, D. L.	LERC	Matese, J. J.	NSG 3049	2187
13	UNIV TEXAS-AUSTIN	Eichelman, W. F.	JSC	Latham, G. V.	NAS 9-14581	3379
13	UNIV TEXAS-DALLAS	Harris, J. W.	JSC	Carter, J. L.	NGR 44-004-116	3418
13	UNIV TEXAS-DALLAS	Berko, F. W.	HQ-SG	Heikkila, W. J.	NGR 44-004-030	3417
13	UNIV TEXAS-DALLAS	Berko, F. W.	HQ-SG	Heikkila, W. J.	NGR 44-004-124	3420

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13	UNIV TEXAS-DALLAS	Berko, F. W.	HQ-SG	Heikkila, W. J.	NSR 44-004-041	3426
13	UNIV TEXAS-DALLAS	Berko, F. W.	HQ-SG	Hoffman, J. H.	NSR 44-004-089	3427
13	UNIV TEXAS-GALVESTON	Eichelman, W. F.	JSC	Latham, G. V.	NAS 9-13143	3432
13	UNIV OF WASHINGTON	Harris, J. W.	JSC	Ghose, S.	NGR 48-002-149	3650
13	UNIV OF WASHINGTON	Thom, K.	HQ-RR	Hertzberg, A.	NGL 48-002-044	3641
13	UNIV OF WASHINGTON	Berko, F. W.	HQ-SG	Parks, G. K.	NGR 48-002-154	3652
13	UNIV WISC-MADISON	Squires, R. K.	GSFC	Suomi, V. E.	NAS 5-20974	3675
13	UNIV WISC-MADISON	Berko, F. W.	HQ-SG	Scherb, F.	NGR 50-002-162	3692
13	UNIV OF WYOMING	Opp, A. G.	HQ-SG	Tompkins, D. R., Jr.	NGR 51-001-035	3713
13	VANDERBILT UNIVERSTY	Hohl, F.	LARC	Lee, J. H.	NGR 43-002-031	3238
13	VANDERBILT UNIVERSTY	Nichols, R. L.	MSFC	Kinser, D. L.	NAS 8-30656	3235
13	VIRGINIA POLY INST	Posey, J. W.	LARC	Nayfeh, A. H.	NAS 1-13884	3592
13	VIRGINIA POLY INST	Yeager, P. R.	LARC	Sanzone, G.	NSG 1020	3611
13	VIRGINIA POLY INST	Sentell, R. J.	LARC	Furr, A. K.	NSG 1119	3619
13	VIRGINIA STATE COL	Wilson, J. W.	LARC	Stronach, C. E.	NGR 47-014-006	3630
13	WASHINGTON UNIVERSTY	Harris, J. W.	JSC	Walker, R. M.	NGL 26-008-065	2603
13	WASHINGTON UNIVERSTY	Heyman, J. S.	LARC	Miller, J. G.	NSG 1016	2606
13	WASHINGTON UNIVERSTY	Jones, J. H.	MSFC	Rodin, E. Y.	NAS 8-26084	2599
13	WASHINGTON UNIVERSTY	Berko, F. W.	HQ-SG	Abrahamshrauner, B.	NGL 26-008-057	2602
13	WAYNE STATE UNIV	Brandhorst, H. W., Jr.	LERC	Wang, E. Y.	NSG 3014	2517
13	WICHITA STATE UNIV	Rice, E. J.	LERC	Eversman, W.	NGR 17-003-018	2133
19	CALIF INST OF TECH	Harris, J. W.	JSC	Harger, R. O.	NSG 9019	1241
19	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Albee, A. L.	NSG 7125	1237
19	CASE WESTERN RESERVE	Nichols, L. D.	LERC	Reshotko, E.	NGL 36-003-064	2975
19	CLEMSON UNIV-CLEMSON	Lynch, T. J.	GSFC	Snelsire, R. W.	NGR 41-001-036	3184
19	COLORADO STATE UNIV	Domitz, S.	LERC	Kaufman, H. R.	NSG 3038	1688
19	COLUMBIA UNIVERSITY	Smith, D. E.	GSFC	Scholz, C. H.	NGR 33-008-146	2768
19	COLUMBIA UNIVERSITY	Eichelman, W. F.	JSC	Langseth, M. G.	NAS 9-6037	2764
19	DC TEACHERS COLLEGE	Holland, A. C.	WFC	Curtis, W. C.	NGR 09-053-002	1778
19	GEORGIA INST OF TECH	Quattrone, P. D.	ARC	Orr, C.	NSG 2004	1915
19	GEORGIA INST OF TECH	Thomas, J. M.	MSFC	Hanagud, S. V.	NAS 8-30617	1895
19	HAMPTON INSTITUTE	Kim, H. H.	WFC	Trehan, A. K.	NGR 47-020-006	3495
19	IOWA STATE UNIV	Zill, L. P.	ARC	Grossman, A. S.	NCA 2-40405	2073
19	LONG ISLAND UNIV	York, L. B.	JSC	Yost, E.	NAS 9-13308	2829
19	MASS INST OF TECH	Ostaff, W. A.	GSFC	Clark, G. W.	NAS 5-11082	2337
19	MASS INST OF TECH	Hacker, P. T.	LERC	Senturia, S. D.	NAS 3-17534	2335
19	MASS INST OF TECH	Gluyas, R. E.	LERC	Senturia, S. D.	NSG 3061	2425
19	MASS INST OF TECH	Adams, W. R.	MSFC	Gatos, H. C.	NAS 8-28306	2345
19	MASS INST OF TECH	Adams, W. R.	MSFC	Gatos, H. C.	NAS 8-30576	2349
19	MASS INST OF TECH	Roman, N. G.	HQ-SG	Clark, G. W.	NSR 22-009-423	2434
19	MORGAN STATE COLLEGE	Pohly, J. G.	HQ-P	Proctor, N. K.	NGT 21-025-006	2218
19	NEW MEX INST MINING	Maran, S. P.	GSFC	Hume, W.	NCA 5-48	2698
19	NEW MEX ST U-LAS CR	Lantz, P. A.	GSFC	Henry, D. G.	NAS 5-20565	2701
19	NEW MEX ST U-LAS CR	Bissell, E. E., Jr.	GSFC	Sayles, A., Jr.	NAS 5-20681	2702
19	NEW MEX ST U-LAS CR	Unavailable	KSC	Unavailable	NAS10-8712	2706
19	NEW YORK INST TECH	Mangus, J. D.	GSFC	Stroke, G. W.	NGR 33-230-001	2831
19	OHIO STATE UNIV	Cassen, P. M.	ARC	Kulacki, F. A.	NGR 36-008-205	3016
19	OHIO STATE UNIV	Costes, N. C.	MSFC	Mueller, I. I.	NAS 8-31195	3007
19	OHIO STATE UNIV	Murphy, J. P.	HQ-ES	Mueller, I. I.	NGL 36-008-093	3010
19	OLD DOMINION UNIV	Kelsall, T. N.	GSFC	Becher, J.	NSG 5053	3559
19	OLD DOMINION UNIV	Hohl, F.	LARC	Harries, W. L.	NSG 1040	3529
19	OLD DOMINION UNIV	Wilson, J. W.	LARC	Khandelwal, G. S.	NSG 1055	3533
19	OLD DOMINION UNIV	Tolson, R. H.	LARC	Breedlove, W. J., Jr.	NSG 1152	3551
19	OLD DOMINION UNIV	Keating, G. M.	LARC	Goglia, G. L.	NSG 1207	3558
19	PENNSYLVANIA STATE U	Duke, J. R.	WFC	Hale, L. C.	NAS 6-2602	3113
19	PRINCETON UNIVERSITY	Williams, T. S., Jr.	LARC	Hargraves, R. B.	NAS 1-9705	2645
19	PRINCETON UNIVERSITY	McHatton, A. D.	LARC	Gillham, J. K.	NGR 31-001-272	2670
19	PURDUE UNIVERSITY	Freden, S. C.	GSFC	Baumgardner, M. F.	NAS 5-21785	2043

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FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
19	RENSSELAER POLY-NY	Wood, G. M.	LARC	White, F. A.	NSG 1052	2874
19	RENSSELAER POLY-NY	Adams, W. R.	MSFC	Wiedemeier, H.	NAS 8-28307	2866
19	RENSSELAER POLY-NY	Adams, W. R.	MSFC	Wiedemeier, H.	NAS 8-30578	2867
19	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Maddock, M.	NCA 2-75414	1287
19	SO DAKOTA STATE UNIV	Forbes, C. D.	JSC	Myers, V. I.	NAS 9-13337	3195
19	SO UNIV-BATON ROUGE	Curry, D. M.	JSC	Chehl, S. S.	NSG 9001	2176
19	SO UNIV-BATON ROUGE	Kent, M. I.	MSFC	Liu, K. H.	NGR 19-005-003	2170
19	STANFORD UNIVERSITY	Hickey, D. H.	ARC	Karamcheti, K.	NSG 2007	1390
19	STANFORD UNIVERSITY	Berko, F. W.	HQ-SG	Croft, T. A.	NGR 05-020-407	1363
19	UNIV ALA-HUNTSVILLE	Adams, W. R.	MSFC	Walter, H. U.	NAS 8-28304	1046
19	UNIV ALA-HUNTSVILLE	Detko, G. J.	MSFC	Luttges, W. E.	NAS 8-31174	1065
19	UNIV OF ARIZONA	Maran, S. O.	GSFC	Burke, J. J.	NCA 5-38	1129
19	UNIV OF ARIZONA	Maran, S. O.	GSFC	Epps, H. W.	NCA 5-39	1130
19	UNIV ARKANSAS-FAYETV	Potter, A. E.	JSC	Waite, W. P.	NAS 9-14251	1176
19	UNIV CALIF-BERKELEY	Roberts, W. T.	MSFC	Mozer, F. S.	NAS 8-31346	1417
19	UNIV CALIF-BERKELEY	Berko, F. W.	HQ-SG	Anderson, K. A.	NGL 05-003-017	1435
19	UNIV CALIF-L ANGELES	Hall, C. F.	ARC	Russell, C. T.	NAS 2-8808	1493
19	UNIV CALIF-L ANGELES	Adams, W. R.	MSFC	Yue, A. S.	NAS 8-28310	1500
19	UNIV CALIF-L ANGELES	Adams, W. R.	MSFC	Yue, A. S.	NAS 8-30579	1503
19	UNIV CALIF-L ANGELES	Berko, F. W.	HQ-SG	Kennel, C. F.	NGL 05-007-190	1517
19	UNIV CALIF-SAN DIEGO	Berko, F. W.	GSFC	Baity, W. A.	NAS 5-11080	1555
19	UNIV CALIF-SAN DIEGO	Woollan, J. A.	LERC	Webb, G. W.	NSG 3055	1595
19	UNIV CALIF-SAN DIEGO	Schmerling, E. R.	HQ-SG	Banks, P. M.	NGR 05-009-256	1589
19	UNIV CALIF-SAN DIEGO	Bryson, R. P.	HQ-SM	Suess, H. E.	NGL 05-009-005	1567
19	UNIV CALIF-S BARBARA	Harris, J. W.	JSC	Fuller, M. D.	NSG 9020	1611
19	UNIV COLORADO-BOLDR	Sinnott, D. B.	ARC	Stewart, A. I.	NAS 2-8816	1693
19	UNIV COLORADO-BOLDR	Hutchby, J. A.	LARC	Chernow, F.	NSG 1027	1721
19	UNIV COLORADO-BOLDR	Hutchby, J. A.	LARC	Chernow, F.	NSG 1037	1722
19	UNIV OF HOUSTON	York, L. B.	JSC	Hayre, H. S.	NAS 9-13462	3338
19	UNIV ILLINOIS-URBANA	Bufton, J. L.	GSFC	Gardner, C. S.	NSG 5049	2023
19	UNIV ILLINOIS-URBANA	Schmerling, E. R.	HQ-SG	Bowhill, S. A.	NGR 14-005-181	2012
19	UNIV OF KANSAS	York, L. B.	JSC	Yarger, H. L.	NAS 9-13271	2115
19	UNIV OF KANSAS	Forbes, C. D.	JSC	Eagleman, J. R.	NAS 9-13273	2116
19	UNIV OF KANSAS	York, L. B.	JSC	Moore, R. K.	NAS 9-13331	2117
19	UNIV MARYLAND-COL PK	Dennis, B. R.	GSFC	Rose, W.	NCA 5-6	2230
19	UNIV MARYLAND-COL PK	Crannel, C. J.	GSFC	Westerhaut, G.	NCA 5-7	2231
19	UNIV MARYLAND-COL PK	Smith, D. E.	GSFC	Currie, D. G.	NGR 21-002-390	2258
19	UNIV MARYLAND-COL PK	Eichelman, W. F.	JSC	Weber, J.	NAS 9-5886	2225
19	UNIV MARYLAND-CCL PK	Cauffman, D. P.	HQ-SG	Wu, C. S.	NGL 21-002-005	2232
19	UNIV MD-EASTRN SHORE	Fitzmaurice, M. W.	GSFC	Singh, G.	NGR 21-119-001	2286
19	UNIV OF MIAMI	Thekaekara, M.	GSFC	Hiser, H. W.	NAS 5-22417	1863
19	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-22441	2472
19	UNIV MICH-ANN ARBOR	Roberts, W. T.	MSFC	Nagy, A. F.	NAS 8-31397	2479
19	U MINN-MNPLS-ST PAUL	Berko, F. W.	HQ-SG	Kellogg, P. J.	NSG 7108	2550
19	UNIV OF NEVADA-RENO	Smith, R. E.	MSFC	Telford, J. W.	NAS 8-31441	2622
19	UNIV OF NOTRE DAME	Kish, J. A.	LERC	Nahas, J. J.	NSG 3070	2071
19	UNIV OF RHODE ISLAND	Hallam, K. L.	GSFC	Choudry, A.	NAS 5-23173	3178
19	UNIV OF SOUTHERN CAL	Adams, W. R.	MSFC	Wilcox, W. R.	NAS 8-28305	1646
19	UNIV TEXAS-DALLAS	Eichelman, W. F.	JSC	Hoffman, J. H.	NAS 9-12074	3412
19	UNIV TEXAS-DALLAS	Dubin, M.	HQ-SG	Tinsley, B. A.	NGR 44-004-142	3422
19	UNIV OF UTAH	Williams, T. S., Jr.	LARC	Shorthill, R. W.	NAS 1-12705	3449
21	AUBURN UNIV-AUBURN	Cummings, R. E.	MSFC	Vachon, R. I.	NAS 8-30654	1022
21	AUBURN UNIV-AUBURN	Cook, L. J.	MSFC	Bell, L.	NCA 8-109	1027
21	BOWIE STATE COLLEGE	Velez, C. E.	GSFC	Srivastava, S.	NGR 21-027-004	2191
21	BOWIE STATE COLLEGE	Pohly, J. G.	HQ-P	Scurry, P. J.	NGT 21-027-009	2193
21	BOWIE STATE COLLEGE	Pohly, J. G.	HQ-P	Kirksey, C. H.	NGT 21-027-012	2194
21	BROWN UNIVERSITY	Lynch, T. J.	GSFC	Cooper, D. B.	NSG 5036	3177
21	CAL STATE U-FULLERTN	Velez, C. E.	GSFC	Pierce, S.	NGR 05-071-005	1251

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21	COPPIN STATE COLLEGE	Muckel, G. A.	GSFC	Sommerfeldt, D. E.	NGR 21-122-001	2197
21	COPPIN STATE COLLEGE	Rosenzweig, M. B.	GSFC	Pinsky, S. S.	NSG 5052	2199
21	FEDERAL CITY COLLEGE	Fuchs, A. J.	GSFC	Bakshi, J. S.	NGR 09-050-020	1785
21	FEDERAL CITY COLLEGE	Lancaster, E. R.	GSFC	Johnson, E. S.	NSG 5003	1786
21	GEORGIA INST OF TECH	Leybold, H. A.	LARC	Hanagud, S. V.	NGR 11-002-169	1907
21	GEORGIA INST OF TECH	Huggins, C. T.	MSFC	Walsh, J. R.	NAS 8-30919	1898
21	IOWA STATE UNIV	Zill, L. P.	ARC	Herget, C. J.	NCA 2-40502	2076
21	LEHIGH UNIVERSITY	Illg, W.	LARC	Erdogan, F.	NGR 39-007-011	3100
21	MARQUETTE UNIVERSITY	Hinton, D. E.	LARC	Nigro, N. J.	NSG 1025	3665
21	MARY BALDWIN COLLEGE	Campbell, J. W.	LARC	Sawyer, J. O.	NSG 1209	3501
21	NEW YORK UNIVERSITY	South, J. C., Jr.	LARC	Garabedian, P. R.	NGR 33-016-167	2840
21	NORFOLK STATE COL	Shoosmith, J. N.	LARC	Boseman, M.	NSG 1014	3502
21	OAKLAND UNIVERSITY	Juday, R. D.	JSC	Haskell, R. E.	NAS 9-14195	2460
21	OLD DOMINION UNIV	Maestrello, L.	LARC	Goglia, G. L.	NSG 1144	3550
21	POLY INST OF NY	Graves, R. A., Jr.	LARC	Rubin, S. G.	NSG 1091	2858
21	RICE UNIVERSITY	Baker, K.	JSC	Lynn, M. S.	NAS 9-12776	3276
21	SAN FRAN STATE UNIV	Zill, L. P.	ARC	Shaw, S. J.	NCA 2-60502	1275
21	STANFORD UNIVERSITY	Zill, L. P.	ARC	Bredt, T. H.	NCA 2-45515	1337
21	STANFORD UNIVERSITY	Zill, L. P.	ARC	Petrosian, J.	NCA 2-45519	1341
21	STANFORD UNIVERSITY	Zill, L. P.	ARC	Oligier, J.	NCA 2-45520	1342
21	STATE UNIV NY-BUFFAL	Van Vleck, E.	MSFC	Jain, A. K.	NAS 8-31434	2889
21	TEXAS A&M UNIVERSITY	Damon, E. P.	GSFC	Simmons, D. B.	NAS 5-11988	3296
21	TEXAS A&M UNIVERSITY	Damon, E. P.	GSFC	Simmons, D. B.	NAS 5-20715	3297
21	TEXAS A&M UNIVERSITY	Pitts, D. E.	JSC	Guseman, L. D.	NAS 9-13894	3309
21	TEXAS A&M UNIVERSITY	Nolin, F. D.	JSC	Guseman, L. F., Jr.	NAS 9-14556	3317
21	TEXAS A&M UNIVERSITY	Baker, K.	JSC	Guseman, L. F., Jr.	NAS 9-14689	3319
21	TEXAS A&M UNIVERSITY	Key, J. E.	MSFC	Strickland, J. A.	NAS 8-31332	3306
21	UNIV ALA-TUSCALOOSA	Digesu, F. E.	MSFC	Ainsworth, O. R.	NAS 8-30886	1082
21	UNIV CALIF-DAVIS	Zill, L. P.	ARC	Fong, C. Y.	NCA 2-80502	1478
21	UNIV CALIF-L ANGELES	Pucine, E. R.	ARC	Unavailable	NAS 2-8454	1491
21	UNIV CALIF-L ANGELES	Zill, L. P.	ARC	Carterette, E. C.	NCA 2-90501	1508
21	UNIV COLORADO-BOLDR	Hirschberg, M. H.	LERC	Essenburg, F.	NGR 06-003-236	1720
21	UNIV OF HAWAII	Smith, M. C., Jr.	ARC	Lichtenberger, W. W.	NAS 2-8600	1939
21	UNIV OF HOUSTON	Baker, K.	JSC	Decell, H. P., Jr.	NAS 9-12777	3335
21	UNIV OF HOUSTON	Hay, D. H.	JSC	Decell, H. P., Jr.	NAS 9-14557	3346
21	UNIV OF HOUSTON	Redding, E. R.	HQ-P	Huang, C. J.	NGL 44-005-084	3353
21	UNIV ILLINOIS-URBANA	Hart, J. P.	ARC	Sher, M. S.	NAS 2-7722	2004
21	UNIV ILLINOIS-URBANA	Slye, R. E.	ARC	Ray, R. M.	NGR 14-005-202	2017
21	UNIV ILLINOIS-URBANA	Schneck, P. B.	GSFC	Slotnick, D.	NAS 5-23334	2005
21	UNIV MARYLAND-COL PK	Pontious, C. E.	HQ-RE	Minker, J.	NGR 21-002-270	2243
21	UNIV MARYLAND-COL PK	Thom, K.	HQ-RR	Tidman, D. A.	NGR 21-002-408	2261
21	UNIV MICH-ANN ARBOR	Straeter, T. A.	LARC	Holland, J. H.	NSG 1176	2504
21	UNIV OF SO FLORIDA	Park, S. K.	LARC	Tsokos, C. P.	NSG 1159	1874
21	UNIV TENNESSEE-KNOXV	Velez, C. E.	GSFC	Feagin, T.	NGR 43-001-144	3224
21	UNIV TENNESSEE-KNOXV	Schaefer, D. H.	GSFC	Bodenheimer, R. E.	NSG 5002	3229
21	UNIV TENNESSEE-KNOXV	Fortenberry, W. H.	MSFC	Sherman, G. R.	NAS 8-30879	3216
21	UNIV TEXAS-AUSTIN	Velez, C. E.	GSFC	Nacozy, P. E.	NGR 44-012-255	3393
21	UNIV TEXAS-AUSTIN	Fehlberg, E.	MSFC	Bettis, D. G.	NAS 8-30245	3369
21	UNIV TEXAS-AUSTIN	Key, J. E.	MSFC	Dunham, R. B.	NAS 8-31566	3372
21	UNIV TEXAS-DALLAS	Baker, K.	JSC	Odell, P. L.	NAS 9-13512	3413
21	UNIV OF UTAH	Foreman, R. G.	JSC	Folias, E. S.	NGR 45-003-093	3462
21	UNIV OF VERMONT	Anliker, J. E.	ARC	Lai, D. C.	NGR 46-001-041	3475
21	UNIV OF VIRGINIA	Barker, L. E.	LARC	Parrish, E. A., Jr.	NSG 1151	3584
21	UNIV WISC-MADISON	Campbell, J. W.	LARC	Johnson, R. A.	NSG 1196	3700
21	UTAH STATE UNIV	Zill, L. P.	ARC	Martin, C. F.	NCA 2-20501	3470
21	UTAH STATE UNIV	Doolin, B. F.	ARC	Gunderson, R. W.	NGR 45-002-016	3472
21	VIRGINIA POLY INST	Campbell, J. W.	LARC	Hinkelmann, K.	NSG 1071	3614
31	ALCORN STATE UNIV	Schmid, P. E.	GSFC	Paul, M. P.	NGR 25-012-001	2553

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31	BOSTON COLLEGE	Haughney, L. C.	ARC	Eather, R. H.	NGR 22-003-027	2289
31	CALIF INST OF TECH	Kelsall, T. N.	GSFC	Neugebauer, G.	NAS 5-20492	1187
31	CALIF INST OF TECH	Fellows, R. F.	HQ-SL	Murray, B. C.	NSG 7112	1236
31	CAL STATE U-CHICO	Boese, R. W.	ARC	Regas, J. L.	NGL 05-076-001	1247
31	CITY COLLEGE OF N Y	Halem, M.	GSFC	Spar, J.	NGR 33-013-086	2749
31	CLARK COLLEGE	Pollack, J. B.	ARC	Walker, G. H.	NGR 11-010-001	1876
31	CLEVELAND STATE UNIV	Reichle, H. G., Jr.	LARC	Peters, L. K.	NSG 1030	2999
31	COLLEGE OF WM & MARY	Russell, J. M., III	LARC	Park, J. H.	NSG 1203	3489
31	COLORADO SCH OF MINE	Stonesifer, G. R.	GSFC	Reeves, R. G.	NAS 5-21778	1658
31	COLORADO STATE UNIV	Theon, J. S.	GSFC	Reiter, E. R.	NGR 06-002-098	1676
31	COLORADO STATE UNIV	Wexler, R.	GSFC	Vonder Haar, T. H.	NGR 06-002-102	1677
31	COLORADO STATE UNIV	Adler, R. F.	GSFC	Vonder Haar, T. H.	NSG 5011	1690
31	COLORADO STATE UNIV	Sweet, G. E.	LARC	Vonder Haar, T. H.	NAS 1-12106	1661
31	COLORADO STATE UNIV	Cooper, J. E.	LARC	Vonder Haar, T. H.	NAS 1-13501	1662
31	COLORADO STATE UNIV	Costen, R. C.	LARC	Sinclair, P. C.	NSG 1023	1684
31	COLORADO STATE UNIV	Costen, R. C.	LARC	Sinclair, P. C.	NSG 1215	1685
31	COLUMBIA UNIVERSITY	White, R. A.	GSFC	Novick, R.	NAS 5-22408	2759
31	CORNELL UNIVERSITY	Allario, F.	LARC	Cool, T. A.	NGL 33-010-064	2798
31	CORNELL UNIVERSITY	Fellows, R. F.	HQ-SL	Sagan, C. E.	NGL 33-010-082	2800
31	CORNELL UNIVERSITY	Fellows, R. F.	HQ-SL	Gierasch, P. J.	NGL 33-010-186	2802
31	DREXEL UNIVERSITY	Sweet, G. E.	LARC	House, F. B.	NAS 1-11871	3094
31	DREXEL UNIVERSITY	Turner, R. E.	MSFC	Kreitzberg, C. W.	NAS 8-31235	3095
31	FAIRFIELD UNIVERSITY	Heath, D. F.	GSFC	McElaney, J. H.	NGR 07-010-002	1742
31	GEORGE WASHINGTON U	Callis, L. B., Jr.	LARC	Liebowitz, H.	NSG 1026	1799
31	GEORGE WASHINGTON U	Callis, L. B.	LARC	Liebowitz, H.	NSG 1216	1804
31	GEORGIA INST OF TECH	Levine, D. M.	GSFC	Robertson, D. W.	NAS 5-20956	1886
31	GEORGIA INST OF TECH	Fellows, R. F.	HQ-SL	Edwards, H. D.	NGL 11-002-004	1902
31	HARVARD UNIVERSITY	Poppoff, I. G.	ARC	McElroy, M. B.	NSG 2031	2323
31	HARVARD UNIVERSITY	Findlay, J. A.	GSFC	McElroy, M. B.	NAS 5-23199	2304
31	HARVARD UNIVERSITY	Theon, J. S.	GSFC	Lindzen, R. S.	NGR 22-007-275	2321
31	HARVARD UNIVERSITY	Soffen, G. A.	LARC	McElroy, M. B.	NAS 1-10492	2299
31	HARVARD UNIVERSITY	Fellows, R. F.	HQ-SL	Goody, R. M.	NGL 22-007-228	2310
31	HARVARD UNIVERSITY	Fellows, R. F.	HQ-SL	Goody, R. M.	NGR 22-007-242	2314
31	HARVARD UNIVERSITY	Fellows, R. F.	HQ-SL	McElroy, M. B.	NGR 22-007-267	2317
31	HARVARD UNIVERSITY	Fellows, R. F.	HQ-SL	Pipkin, F. M.	NSG 7095	2327
31	IOWA STATE UNIV	Zill, L. P.	ARC	Grossman, A. S.	NCA 2-40504	2078
31	JOHNS HOPKINS UNIV	Findlay, J. A.	GSFC	Doering, D. M.	NAS 5-11415	2201
31	JOHNS HOPKINS UNIV	Roberts, W. T.	MSFC	Feldman, P. D.	NAS 8-31413	2204
31	KANSAS STATE UNIV	Fellows, R. F.	HQ-SL	Williams, D. P.	NGL 17-001-026	2105
31	MASS INST OF TECH	Reynolds, R. T.	ARC	Prinn, R. G.	NSG 2010	2416
31	MASS INST OF TECH	Ratliff, R. B.	GSFC	Staelin, D. H.	NAS 5-21980	2339
31	MASS INST OF TECH	Wilheit, T. T.	GSFC	Barrett, A. H.	NGR 22-009-421	2378
31	MASS INST OF TECH	Halem, M.	GSFC	Charney, J.	NGR 22-009-727	2392
31	MASS INST OF TECH	Eichelman, W. F.	JSC	Press, F.	NAS 9-12334	2353
31	MASS INST OF TECH	Kendall, B. M.	LARC	Staelin, D. H.	NAS 1-10693	2331
31	MASS INST OF TECH	Roman, N. G.	HQ-SG	Shapiro, I. I.	NGR 22-009-366	2376
31	MASS INST OF TECH	Fellows, R. F.	HQ-SL	Lewis, J. S.	NGL 22-009-521	2368
31	MASS INST OF TECH	Fellows, R. F.	HQ-SL	Shapiro, I. I.	NGR 22-009-804	2405
31	NEW MEX ST U-LAS CR	Fellows, R. F.	HQ-SL	Smith, B. A.	NGR 32-003-076	2710
31	NEW YORK UNIVERSITY	Halem, M.	GSFC	Isaacson, E.	NGL 33-016-013	2837
31	NEW YORK UNIVERSITY	Stewart, R. W.	GSFC	Hoffert, M. I.	NSG 5033	2849
31	NEW YORK UNIVERSITY	Halem, M.	GSFC	Isaacson, E.	NSG 5034	2850
31	NEW YORK UNIVERSITY	Halem, M.	GSFC	Hoffert, M. I.	NSG 5045	2851
31	NEW YORK UNIVERSITY	Freeman, R. S.	LARC	Korer, S. A.	NAS 1-10282	2833
31	NO CAROLINA STATE U	Sidney, B. D.	LARC	Hassan, H. A.	NSG 1013	2957
31	OHIO STATE UNIV	Hirschmann, E.	GSFC	Levis, C. A.	NAS 5-21983	3005
31	OLD DOMINION UNIV	Crumbly, K. H.	LARC	Harris, F. S., Jr.	NGR 47-003-068	3517
31	OLD DOMINION UNIV	Melfi, L. T., Jr.	LARC	Clay, F. P., Jr.	NGR 47-003-082	3520

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FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
31	OLD DOMINION UNIV	Keating, G. M.	LARC	Goglia, G. L.	NSG 1028	3526
31	OLD DOMINION UNIV	Remsberg, E. E.	LARC	Kindle, E. C.	NSG 1060	3534
31	OLD DOMINION UNIV	McCormick, M. P.	LARC	Chu, W. P.	NSG 1108	3544
31	OLD DOMINION UNIV	Reichle, H. G., Jr.	LARC	Kindle, E. C.	NSG 1127	3546
31	OLD DOMINION UNIV	Russell, J. M., III	LARC	Kindle, E. C.	NSG 1131	3547
31	OLD DOMINION UNIV	Reichle, H. G., Jr.	LARC	Tiwari, S. N.	NSG 1153	3552
31	OLD DOMINION UNIV	Allario, F.	LARC	Kindle, E. C.	NSG 1197	3557
31	OLD DOMINION UNIV	McCormick, M. P.	LERC	Deepak, A.	NSG 1090	3538
31	OLD DOMINION UNIV	Spurling, J. R.	WFC	Bandy, A. R.	NSG 6002	3560
31	OLD DOMINION UNIV	Vitale, J. A.	HQ-P	Kindle, E. C.	NGL 47-003-067	3513
31	PENNSYLVANIA STATE U	Fichtl, G. H.	MSFC	Blackadar, A. K.	NAS 8-21140	3114
31	PENNSYLVANIA STATE U	Fichtl, G. H.	MSFC	Long, S. R.	NAS 8-27334	3115
31	POLY INST OF NY	Halem, M.	GSFC	Miller, J. E.	NSG 5041	2863
31	POLY INST OF NY	Fellows, R. F.	HQ-SL	Gross, S. H.	NGR 33-006-068	2856
31	RENSSELAER POLY-NY	Fellows, R. F.	HQ-SL	Harteck, P.	NGL 33-018-007	2869
31	RICE UNIVERSITY	Fellows, R. F.	HQ-SL	Chamberlain, J. W.	NSG 7043	3289
31	RICE UNIVERSITY	Stuart-Alexander, D. E.	HQ-SM	Lenzen, K. H.	NSG 7025	3287
31	RICE UNIVERSITY	Hanley, J. B.	HQ-SM	Michel, F. C.	NSG 7032	3288
31	ST LOUIS UNIVERSITY	Fellows, R. F.	HQ-SL	Pallman, A. J.	NGR 26-006-042	2581
31	SAN DIEGO STATE UNIV	Roosen, R. G.	GSFC	Angione, R. J.	NAS 5-20772	1269
31	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Riegel, C. A.	NCA 2-75509	1290
31	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Ellesen, R.	NCA 2-75518	1296
31	STANFORD UNIVERSITY	Zill, L. P.	ARC	Mitchner, M.	NCA 2-45517	1339
31	STANFORD UNIVERSITY	Reynolds, R. T.	ARC	Spreiter, J. R.	NSG 2072	1397
31	STANFORD UNIVERSITY	Heath, D. F.	GSFC	Wilcox, J. M.	NSG 5024	1399
31	STANFORD UNIVERSITY	Northam, G. B.	LARC	Byer, R. L.	NSG 1012	1386
31	STANFORD UNIVERSITY	Fellows, R. F.	HQ-SL	Howard, H. T.	NGL 05-020-014	1346
31	STATE UNIV NY-ALBANY	Reynolds, R. T.	ARC	Kiang, C. S.	NSG 2080	2884
31	STATE UNIV NY-ALBANY	Dubin, M.	HQ-SG	Weinberg, J. L.	NSG 7093	2885
31	STATE U NY-STONY BRK	Hansen, J. E.	GSFC	Webb, W. E.	NGR 33-015-165	2904
31	STATE U NY-STONY BRK	Hansen, J. E.	GSFC	Hogan, J. S.	NSG 5015	2911
31	STATE U NY-STONY BRK	Fellows, R. F.	HQ-SL	Varanasi, P.	NGR 33-015-139	2900
31	TENNESSEE TECH U	Humphries, W. R.	MSFC	Griggs, E. I.	NAS 8-31564	3206
31	TEXAS A&M UNIVERSITY	Ehernberger, L. J.	FRC	Scoggins, J. R.	NGR 44-001-081	3322
31	TEXAS A&M UNIVERSITY	Turner, R. E.	MSFC	Scoggins, J. R.	NAS 8-26751	3302
31	TEXAS A&M UNIVERSITY	Fichtl, G. H.	MSFC	Brundidge, K. C.	NAS 8-29582	3303
31	TEXAS A&M UNIVERSITY	Fichtl, G. H.	MSFC	Scoggins, J. R.	NAS 8-29764	3304
31	TEXAS A&M UNIVERSITY	Fellows, R. F.	HQ-SL	Plass, G. N.	NGR 44-001-117	3323
31	UNIV ALA-HUNTSVILLE	Smith, R. E.	MSFC	Hung, R. J.	NAS 8-30247	1054
31	UNIV ALA-HUNTSVILLE	Smith, R. E.	MSFC	Hung, R. J.	NAS 8-30616	1057
31	UNIV ALA-HUNTSVILLE	Smith, R. E.	MSFC	Hung, R. J.	NAS 8-31321	1068
31	UNIV ALA-TUSCALOOSA	Randall, J. L.	MSFC	Webb, W. E.	NAS 8-25562	1073
31	UNIV ALASKA-FAIRBNKS	Haughney, L. C.	ARC	Sivjee, G. G.	NGR 02-001-099	1094
31	UNIV ALASKA-FAIRBNKS	Haughney, L. C.	ARC	Sivjee, G. G.	NSG 2053	1095
31	UNIV ALASKA-FAIRBNKS	Crump, E. W.	GSFC	Belon, A. E.	NAS 5-21833	1089
31	UNIV OF ARIZONA	Tischler, E.	ARC	Tomasko, M.	NAS 2-7883	1105
31	UNIV OF ARIZONA	Hall, C. F.	ARC	Tomasko, M. G.	NAS 2-8818	1106
31	UNIV OF ARIZONA	Heath, D. F.	GSFC	Herman, B. M.	NGR 03-002-382	1154
31	UNIV OF ARIZONA	Le Vine, D. M.	GSFC	Krider, E. P.	NSG 5023	1162
31	UNIV OF ARIZONA	Curran, R. J.	GSFC	Herman, B. M.	NSG 5046	1164
31	UNIV OF ARIZONA	Toft, P. D.	KSC	Krider, E. P.	NAS10-8518	1122
31	UNIV OF ARIZONA	Fellows, R. F.	HQ-SL	Hoenig, S. A.	NGL 03-002-019	1135
31	UNIV CALIF-BERKELEY	Golden, R. L.	JSC	Alvarez, L. W.	NAS 9-7801	1418
31	UNIV CALIF-BERKELEY	Dubin, M.	HQ-SG	Cunningham, L. E.	NGR 05-003-309	1444
31	UNIV CALIF-BERKELEY	Fellows, R. F.	HQ-SL	Pimental, G. C.	NGL 05-003-286	1438
31	UNIV CALIF-L ANGELES	Ehernberger, L. J.	FRC	Wurtele, M. G.	NSG 4001	1545
31	UNIV CALIF-L ANGELES	Bandeem, W. R.	GSFC	Kuriyan, J. G.	NAS 5-21968	1498
31	UNIV CALIF-L ANGELES	Wexler, R.	GSFC	Mintz, Y.	NGR 05-007-091	1522

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31	UNIV CALIF-L ANGELES	Halem, M.	GSFC	Mintz, Y.	NGR 05-007-328	1530
31	UNIV CALIF-L ANGELES	McCormick, M. P.	LARC	Kuriyan, J. G.	NSG 1106	1542
31	UNIV CALIF-L ANGELES	Fellows, R. F.	HQ-SL	Kieffer, H. H.	NGR 05-007-437	1540
31	UNIV CALIF-SAN DIEGO	Donley, J. L.	GSFC	Peterson, L. E.	NAS 5-11081	1556
31	UNIV CALIF-SAN DIEGO	Schmerling, E. R.	HQ-SG	Douppnik, J. R.	NSG 7001	1596
31	UNIV OF CHICAGO	Shenk, W. E.	GSFC	Fujita, T. T.	NGR 14-001-008	1990
31	UNIV OF CHICAGO	Fellows, R. F.	HQ-SL	Kaplan, L. D.	NGR 14-001-194	1994
31	UNIV COLORADO-BOLDR	Sinnott, D.	ARC	Stewart, I.	NAS 2-7901	1692
31	UNIV COLORADO-BOLDR	Findlay, J. A.	GSFC	Barth, C. A.	NAS 5-11405	1695
31	UNIV COLORADO-BOLDR	White, R. A.	GSFC	Bruner, E. C.	NAS 5-22409	1698
31	UNIV COLORADO-BOLDR	Pirraglia, J.	GSFC	Hard, C.	NAS 5-22440	1699
31	UNIV COLORADO-BOLDR	Dubin, M.	HQ-SG	Barth, C. A.	NGL 06-003-064	1705
31	UNIV COLORADO-BOLDR	Fellows, R. F.	HQ-SL	Barth, C. A.	NGL 06-003-052	1703
31	UNIV COLORADO-BOLDR	Brunk, W. E.	HQ-SL	Barth, C. A.	NGR 06-003-127	1708
31	UNIV COLORADO-BOLDR	Fellows, R. F.	HQ-SL	Thomas, G. E.	NGR 06-003-201	1713
31	UNIV OF DAYTON	Duke, J. R.	WFC	Luers, J. K.	NAS 6-2456	3043
31	UNIV OF DENVER	Russell, J. M., III	LARC	Murcra y, D. G.	NGR 06-004-131	1738
31	UNIV OF FLORIDA	Heath, D. F.	GSFC	Prasad, S. S.	NSG 5026	1861
31	UNIV OF FLORIDA	Michalski, J. P.	KSC	Bartholic, J. F.	NAS10-8404	1844
31	UNIV OF FLORIDA	Toft, P. D.	KSC	Uman, M. A.	NGR 10-005-169	1855
31	UNIV OF FLORIDA	Fellows, R. F.	HQ-SL	Green, A. S.	NGL 10-005-008	1848
31	UNIV OF HOUSTON	Berko, F. W.	HQ-SG	Sheldon, W. R.	NGR 44-005-133	3359
31	UNIV OF IOWA	Davis, M. A.	GSFC	Gurnett, D. A.	NAS 5-11431	2094
31	UNIV OF KENTUCKY	Reichle, H. G., Jr.	LARC	Peters, L. K.	NSG 1111	2150
31	UNIV MARYLAND-COL PK	Haughney, L. C.	ARC	Dick, K. A.	NSG 2079	2273
31	UNIV MARYLAND-COL PK	Abid, G. E.	GSFC	Laster, H. E.	NGL 21-002-033	2233
31	UNIV MARYLAND-COL PK	Brace, L. H.	GSFC	Matthews, D. L.	NGR 21-002-096	2239
31	UNIV MARYLAND-COL PK	Mentzer, R. H.	GSFC	Pai, S. I.	NGR 21-002-296	2246
31	UNIV MARYLAND-COL PK	Arking, A.	GSFC	Rosenfeld, A.	NGR 21-002-378	2256
31	UNIV MARYLAND-COL PK	Northam, G. B.	LARC	Wilkerson, T. D.	NSG 1036	2269
31	UNIV MARYLAND-COL PK	Northam, G. B.	LARC	Gammon, R. W.	NSG 1156	2271
31	UNIV MICH-ANN ARBOR	Cooley, J. E.	GSFC	Carignan, G. R.	NAS 5-11128	2464
31	UNIV MICH-ANN ARBOR	Pelz, D. T.	GSFC	Carignan, G. R.	NAS 5-11376	2466
31	UNIV MICH-ANN ARBOR	Sing, M. L.	GSFC	Cliff, R. A.	NAS 5-11380	2467
31	UNIV MICH-ANN ARBOR	Wright, D. U.	GSFC	Horvath, J. J.	NAS 5-20622	2468
31	UNIV MICH-ANN ARBOR	Krehbiel, J. P.	GSFC	Brace, L. H.	NAS 5-20806	2469
31	UNIV MICH-ANN ARBOR	Findlay, J. A.	GSFC	Hays, P. B.	NAS 5-23006	2473
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-23230	2474
31	UNIV MICH-ANN ARBOR	Curran, R. J.	GSFC	Weil, H.	NSG 5044	2507
31	UNIV MICH-ANN ARBOR	Wexler, R.	GSFC	Bartman, F. L.	NSR 23-005-376	2511
31	UNIV MICH-ANN ARBOR	Unavailable	GSFC	Unavailable	S-54214A	2512
31	UNIV MICH-ANN ARBOR	Koons, F. D.	JSC	Anderson, J. G.	NAS 9-14609	2480
31	UNIV MICH-ANN ARBOR	Hudson, R. D.	JSC	Cicerone, R. J.	NGR 23-005-616	2500
31	UNIV MICH-ANN ARBOR	Stanley, J. F.	JSC	Anderson, J. G.	NSG 9031	2510
31	UNIV MICH-ANN ARBOR	Reichle, H. G., Jr.	LARC	Drayson, S. R.	NGR 23-005-617	2501
31	UNIV MICH-ANN ARBOR	Russell, J. M., III	LARC	Drayson, S. R.	NSG 1003	2502
31	UNIV MICH-ANN ARBOR	Devries, L. L.	MSFC	Stedman, D. H.	NAS 8-30625	2478
31	UNIV MICH-ANN ARBOR	Cauffman, D. P.	HQ-SG	Nagy, A. F.	NGR 23-005-015	2485
31	UNIV MICH-ANN ARBOR	Dubin, M.	HQ-SG	Bartman, F. L.	NGR 23-005-540	2495
31	UNIV MICH-ANN ARBOR	Fellows, R. F.	HQ-SL	Liu, V. C.	NGR 23-005-094	2486
31	UNIV MICH-ANN ARBOR	Fellows, R. F.	HQ-SL	Carignan, G. R.	NGR 23-005-561	2497
31	U MINN-MNPLS-ST PAUL	Polaski, L. J.	ARC	Von Zahn, U.	NAS 2-7900	2522
31	U MINN-MNPLS-ST PAUL	Thorley, G. W.	ARC	Nier, A. O.	NAS 2-8812	2523
31	U MINN-MNPLS-ST PAUL	Findlay, J. A.	GSFC	Nier, A. O.	NAS 5-11438	2527
31	U MINN-MNPLS-ST PAUL	Beswick, A. G.	LARC	Nier, A. O.	NAS 1-11676	2520
31	U MINN-MNPLS-ST PAUL	Keating, G. M.	LARC	Mauersberger, K.	NAS 1-13712	2521
31	U MINN-MNPLS-ST PAUL	Dubin, M.	HQ-SG	Nier, A. O.	NGR 24-005-196	2540
31	U MINN-MNPLS-ST PAUL	Fellows, R. F.	HQ-SL	Nier, A. O.	NGL 24-005-009	2534

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31	UNIV MO-COLUMBIA	Curran, R. J.	GSFC	Schuster, B. G.	NAS 5-20818	2583
31	UNIV MO-COLUMBIA	Smith, R. E.	MSFC	Plummer, P. L.	NAS 8-31150	2585
31	UNIV NEBRASKA-LINCLN	Fellows, R. F.	HQ-SL	Samson, J. A.	NGR 28-004-021	2618
31	UNIV OF NEVADA-RENO	Smith, R. E.	MSFC	Squires, P.	NAS 8-31470	2623
31	UNIV NEW BRUNSWICK	Reichle, H. G., Jr.	LARC	Young, C.	NGR 52-163-001	3719
31	UNIV OF NEW MEXICO	Haughney, L. C.	ARC	Peterson, A. W.	NSG 2052	2734
31	UNIV OF NEW MEXICO	Hyder, C. L.	GSFC	Regener, V. H.	NCA 5-31	2719
31	UNIV OF NEW MEXICO	Jones, H. P.	GSFC	Regener, V. H.	NCA 5-32	2720
31	UNIV OF NEW MEXICO	Hyder, C. L.	GSFC	Regener, V. H.	NCA 5-33	2721
31	UNIV OF NEW MEXICO	Hyder, C. L.	GSFC	Regener, V. H.	NCA 5-34	2722
31	UNIV OF NEW MEXICO	Unavailable	GSFC	Unavailable	NCA 5-36	2723
31	UNIV OKLAHOMA-NORMAN	Pitts, D. E.	JSC	Sasaki, Y.	NAS 9-13360	3069
31	UNIV OKLAHOMA-NORMAN	Turner, R. E.	MSFC	Inman, R. L.	NAS 8-28659	3065
31	UNIV OKLAHOMA-NORMAN	Turner, R. E.	MSFC	Inman, R. L.	NAS 8-31333	3067
31	UNIV OKLAHOMA-NORMAN	Cliff, W. C.	MSFC	Inman, R. L.	NAS 8-31377	3068
31	UNIV OF PITTSBURGH	Dubin, M.	HQ-SG	Zipf, E. C., Jr.	NGR 39-011-113	3158
31	UNIV OF PITTSBURGH	Fellows, R. F.	HQ-SL	Fite, W. L.	NGL 39-011-013	3153
31	UNIV OF PITTSBURGH	Fellows, R. F.	HQ-SL	Zipf, E. C., Jr.	NGL 39-011-030	3154
31	UNIV OF PITTSBURGH	Fellows, R. F.	HQ-SL	Biondi, M. A.	NGR 39-011-137	3159
31	UNIV SAN FRANCISCO	Farlow, N. H.	ARC	Harding-Barlow, A. I.	NSG 2051	1621
31	UNIV OF SANTA CLARA	Zill, L. P.	ARC	McCormick, P. T.	NCA 2-85507	1630
31	UNIV OF SO CAROLINA	Fellows, R. F.	HQ-SL	Durig, J. R.	NGL 41-002-003	3190
31	UNIV OF SOUTHERN CAL	Fellows, R. F.	HQ-SL	Maxworthy, T.	NGR 05-018-178	1653
31	UNIV OF SOUTHERN CAL	Fellows, R. F.	HQ-SL	Judge, D. L.	NGR 05-018-180	1654
31	UNIV TENNESSEE-KNOXV	Kunde, V. G.	GSFC	Fox, K.	NAS 5-20672	3210
31	UNIV TENNESSEE-KNOXV	Fellows, R. F.	HQ-SL	Gailar, N. M.	NGL 43-001-006	3219
31	U TENNESSEE-MEMPHIS	Allen, W. K.	GSFC	Rochelle, R. W.	NAS 5-22495	3232
31	UNIV TEXAS-DALLAS	Polaski, L. J.	ARC	Hoffman, J. H.	NAS 2-7865	3408
31	UNIV TEXAS-DALLAS	Hall, C. F.	ARC	Hoffman, J. H.	NAS 2-8802	3409
31	UNIV TEXAS-DALLAS	Findlay, J. A.	GSFC	Hansen, W. B.	NAS 5-11406	3410
31	UNIV TEXAS-DALLAS	Findlay, J. A.	GSFC	Hoffman, R.	NAS 5-11407	3411
31	UNIV TEXAS-DALLAS	Berko, F. W.	HQ-SG	Hanson, W. B.	NGR 44-004-120	3419
31	UNIV TEXAS-DALLAS	Schmerling, E. R.	HQ-SG	Heikkila, W. J.	NGR 44-004-150	3423
31	UNIV TEXAS-DALLAS	Schmerling, E. R.	HQ-SG	Hoffman, J. H.	NSG 7107	3425
31	UNIV TEXAS-DALLAS	Fellows, R. F.	HQ-SL	Johnson, F. S.	NGL 44-004-001	3414
31	UNIV TEXAS-DALLAS	Fellows, R. F.	HQ-SL	Johnson, F. S.	NGL 44-004-026	3415
31	UNIV TEXAS-DALLAS	Hanley, J. B.	HQ-SM	Hodges, R. R., Jr.	NSG 7034	3424
31	UNIV OF UTAH	Hardesty, C. A.	LARC	Weil, H.	NGL 45-003-025	3460
31	UNIV OF UTAH	Schmidlin, F. J.	WFC	Staffanson, F. L.	NAS 6-1908	3452
31	UNIV OF UTAH	Duke, J. R.	WFC	Kao, S. K.	NAS 6-2498	3453
31	UNIV OF UTAH	Duke, J. R.	WFC	Staffanson, F. L.	NAS 6-2627	3454
31	UNIV OF WASHINGTON	Treon, S. L.	GSFC	Leovy, C. B.	NGR 48-002-125	3646
31	UNIV OF WASHINGTON	Theon, J. S.	GSFC	Leovy, C. B.	NSG 5039	3655
31	UNIV OF WASHINGTON	Williams, T. S., Jr.	LARC	Leovy, C. B.	NAS 1-9694	3632
31	UNIV OF WASHINGTON	Fellows, R. F.	HQ-SL	Leovy, C. B.	NGR 48-002-073	3644
31	UNIV OF WASHINGTON	Fellows, R. F.	HQ-SL	Leovy, C. B.	NGR 48-002-162	3653
31	UNIV OF WASHINGTON	Fellows, R. F.	HQ-SL	Leovy, C. B.	NSG 7085	3656
31	UNIV WISC-MADISON	Twarowski, R. J.	ARC	Suomi, Y. E.	NAS 2-7882	3669
31	UNIV WISC-MADISON	Hall, C. F.	ARC	Suomi, V. E.	NAS 2-8813	3671
31	UNIV WISC-MADISON	Donley, J. L.	GSFC	Kraushaar, W. L.	NAS 5-11361	3672
31	UNIV WISC-MADISON	Wexler, R.	GSFC	Bottino, M. L.	NAS 5-21798	3676
31	UNIV WISC-MADISON	Moody, J. C.	GSFC	Suomi, V. E.	NAS 5-21965	3677
31	UNIV WISC-MADISON	White, R. A.	GSFC	Kraushaar, W. L.	NAS 5-22410	3679
31	UNIV WISC-MADISON	Greaves, J. R.	GSFC	Suomi, V. E.	NAS 5-23296	3681
31	UNIV WISC-MADISON	Halem, M.	GSFC	Suomi, V. E.	NGR 50-002-215	3696
31	UNIV WISC-MADISON	Smith, G. L.	LARC	Suomi, V. E.	NAS 1-13204	3667
31	UNIV WISC-MADISON	Remsberg, E. E.	LARC	Weinman, J. A.	NSG 1057	3699
31	UNIV WISC-MADISON	Fellows, R. F.	HQ-SL	Suomi, V. E.	NGR 50-002-189	3694

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31	UNIV OF WYOMING	Mason, R. H.	ARC	Hackwell, J. A.	NGR 51-001-036	3714
31	UNIV OF WYOMING	Mauldin, L. E.	LARC	Pepin, T. J.	NAS 1-12798	3707
31	UNIV OF WYOMING	Crumbly, K. H.	LARC	Pepin, T. J.	NAS 1-13213	3708
31	UNIV OF WYOMING	Hedgepeth, K. D.	LARC	Pepin, T. J.	NAS 1-13797	3709
31	UNIV OF WYOMING	McCormick, M. P.	LARC	Schroeder, D. J.	NGR 51-001-045	3715
31	UNIV OF WYOMING	Mauldin, L. E., III	LARC	Pepin, T. J.	NSG 1006	3716
31	UTAH STATE UNIV	Lowenstein, M.	ARC	Shaw, A. W.	NAS 2-8108	3469
31	VIRGINIA POLY INST	Byvik, C. E.	LARC	Wightman, J. P.	NAS 1-10646	3590
31	VIRGINIA POLY INST	Campbell, J. W.	LARC	Myers, R. H.	NSG 1182	3622
31	VIRGINIA POLY INST	West, W. H.	WFC	Tieleman, H. W.	NGL 47-004-067	3598
31	YALE UNIVERSITY	Schmerling, E. R.	HQ-SG	Walker, J. C.	NGR 07-004-109	1755
31	YALE UNIVERSITY	Fellows, R. F.	HQ-SL	Cross, R. J., Jr.	NGL 07-004-043	1752
31	YORK UNIVERSITY	Baker, C. E.	LERC	Schiff, H. I.	NGR 52-134-005	3722
32	ARIZONA STATE UNIV	Hanley, J. B.	HQ-SM	Moore, C. B.	NGL 03-001-001	1097
32	ARIZONA STATE UNIV	Stuart-Alexander, D. E.	HQ-SM	Larimer, J. W.	NSG 7040	1100
32	BOSTON UNIVERSITY	Young, R. S.	HQ-SL	Margulis, L.	NGR 22-004-025	2293
32	BOSTON UNIVERSITY	Bryson, R. P.	HQ-SM	Brewer, T.	NGR 22-004-027	2294
32	BRIGHAM YOUNG UNIV	Phinney, W. C.	JSC	Ladle, G. H.	NAS 9-14499	3444
32	BROWN UNIVERSITY	Harris, J. W.	JSC	Rutherford, M. J.	NGR 40-002-123	3175
32	BROWN UNIVERSITY	Dwornik, S. E.	HQ-SL	Mutch, T. A.	NGR 40-002-088	3172
32	BROWN UNIVERSITY	Kosofsky, L. J.	HQ-SM	Head, J. W., III	NASW 2827	3169
32	BROWN UNIVERSITY	Alexander, D. E.	HQ-SM	Head, J. W., III	NGR 40-002-116	3174
32	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Murray, B. C.	NGR 05-002-117	1211
32	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Shoemaker, E. M.	NGR 05-002-302	1221
32	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Shoemaker, E. M.	NGR 05-002-303	1222
32	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Murray, B. C.	NGR 05-002-305	1223
32	CALIF INST OF TECH	Young, R. S.	HQ-SL	Bonner, J.	NGR 05-002-310	1225
32	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Anderson, D. L.	NGR 05-002-316	1227
32	CALIF INST OF TECH	Fellows, R. F.	HQ-SL	Neugebauer, G.	NSG 7094	1235
32	CALIF INST OF TECH	Bryson, R. P.	HQ-SM	Anderson, D. L.	NGL 05-002-069	1199
32	CALIF INST OF TECH	Bryson, R. P.	HQ-SM	Ahrens, T. J.	NGL 05-002-105	1200
32	CALIF INST OF TECH	Bryson, R. P.	HQ-SM	Feldman, P. D.	NSG 7023	1233
32	CALIF INST OF TECH	Bryson, R. P.	HQ-SM	Wasserburg, G. J.	NSG 7084	1234
32	CALIF INST OF TECH	Bryson, R. P.	HQ-SM	Ahrens, T. J.	NSG 7129	1238
32	CAL STATE U-HAYWARD	Zill, L. P.	ARC	Warnke, D. E.	NCA 2-90501	1265
32	CITY COLLEGE OF N Y	Rossi, L. C.	WFC	Pierson, W. J.	NAS 6-2439	2741
32	CITY U N Y-GRAD SCHL	Kosofsky, L. J.	HQ-SM	Saxena, S. K.	NSG 7028	2753
32	COLLEGE VIRGIN ISLND	Bryson, R. P.	HQ-SM	Adams, J. B.	NGR 52-083-003	3717
32	COLORADO SCH OF MINE	Miller, M. L.	JSC	Lee, K.	NAS 9-13394	1659
32	COLORADO STATE UNIV	Carpenter, L. H.	GSFC	Thompson, E. G.	NGR 06-002-191	1683
32	COLUMBIA UNIVERSITY	Harris, J. W.	JSC	Schreiber, E.	NSG 9025	2784
32	COLUMBIA UNIVERSITY	Stanley, H. R.	WFC	Talwani, M.	NAS 6-2519	2761
32	CORNELL UNIVERSITY	Smith, D. E.	GSFC	Turcotte, D. L.	NSG 5060	2823
32	CORNELL UNIVERSITY	Raring, R. H.	HQ-SL	Unavailable	NASW 2445	2793
32	CORNELL UNIVERSITY	Dwornik, S. E.	HQ-SL	Sagan, C. E.	NGR 33-010-220	2819
32	CORNELL UNIVERSITY	Bryson, R. P.	HQ-SM	Gold, T.	NGL 33-010-005	2796
32	CORNELL UNIVERSITY	Kosofsky, L. J.	HQ-SM	Turcotte, D. L.	NGR 33-010-108	2805
32	CORNELL UNIVERSITY	Kosofsky, L. J.	HQ-SM	Kuckes, A. F.	NGR 33-010-178	2812
32	DARTMOUTH COLLEGE	Miller, M. L.	JSC	Stoieber, R. E.	NAS 9-13311	2625
32	DE ANZA COLLEGE	Trombka, J. I.	GSFC	Greisen, K. I.	NSG 2005	1260
32	FAIRLEIGH-DICKNSON U	Kosofsky, L. J.	HQ-SM	Adams, J. B.	NGL 31-006-010	2641
32	FAIRLEIGH-DICKNSON U	Kosofsky, L. J.	HQ-SM	Hartung, J. B.	NSG 7047	2643
32	FLORIDA STATE UNIV	Williams, T. S., Jr.	LARC	Hess, S. K.	NAS 1-9693	1835
32	GEORGIA SOUTHWTN COL	Bensko, J., Jr.	MSFC	Arden, D. D.	NAS 8-30884	1923
32	HAMILTON COLLEGE	Dwornik, S. E.	HQ-SL	Potter, D. B.	NGR 33-192-001	2827
32	HARVARD UNIVERSITY	Young, R. S.	HQ-SL	Barghoorn, E. S.	NGL 22-007-069	2308
32	HARVARD UNIVERSITY	Dwornik, S. E.	HQ-SL	Cameron, A. G.	NGR 22-007-269	2318
32	INDIANA U-BLOOMINGTN	Young, R. S.	HQ-SL	Hayes, J. M.	NGR 15-003-118	2037

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32	IOWA STATE UNIV	Zill, L. P.	ARC	Iverson, J. D.	NCA 2-40501	2075
32	IOWA STATE UNIV	Zill, L. P.	ARC	Iversen, J. D.	NCA 2-40601	2081
32	JOHNS HOPKINS UNIV	Kavanagh, L. D., Jr.	HQ-SG	Krimigis, S. M.	NGR 21-001-119	2209
32	LEHIGH UNIVERSITY	Kosofsky, L. J.	HQ-SM	Goldstein, J. I.	NGR 39-007-043	3101
32	LONG ISLAND UNIV	Jastrow, R.	GSFC	Yost, E.	NGR 33-151-006	2830
32	MASS INST OF TECH	Hill, C. K.	MSFC	Hart, J. E.	NAS 8-31149	2351
32	MASS INST OF TECH	Brunk, W. E.	HQ-SL	Barrett, A. H.	NGL 22-009-016	2360
32	MASS INST OF TECH	Kosofsky, L. J.	HQ-SM	Press, F.	NGL 22-009-187	2365
32	MASS INST OF TECH	Kósofsky, L. J.	HQ-SM	McCord, T. P.	NGR 22-009-790	2402
32	MASS INST OF TECH	Kosofsky, L. J.	HQ-SM	Counselman, H. C. C., III	NSG 7010	2427
32	MASS INST OF TECH	Kosofsky, L. J.	HQ-SM	McCord, T. B.	NSG 7048	2428
32	MASS INST OF TECH	Kosofsky, L. J.	HQ-SM	Lewis, J. S.	NSG 7077	2429
32	MASS INST OF TECH	Kosofsky, L. J.	HQ-SM	Toksoz, M. N.	NSG 7081	2430
32	MASS INST OF TECH	Kosofsky, L. J.	HQ-SM	Madden, T. R.	NSG 7115	2432
32	MASS INST OF TECH	Kosofsky, L. J.	HQ-SM	Counselman, H. C. C., III	NSG 7118	2433
32	NEW MEX INST MINING	Broderick, J.	GSFC	Vander Linden	NAS 5-20916	2695
32	NEW MEX ST U-LAS CR	Dwornik, S. E.	HQ-SL	Smith, B. A.	NGR 32-003-075	2709
32	NORTHWESTERN UNIV	Bryson, R. P.	HQ-SM	Hynek, J. A.	NGL 14-007-016	1960
32	OHIO STATE UNIV	Marsh, J. G.	GSFC	Rapp, R. H.	NGR 36-008-161	3013
32	OHIO STATE UNIV	Stanley, H. R.	WFC	Rapp, R. H.	NAS 6-2484	3006
32	OHIO STATE UNIV	Murphy, J. P.	HQ-ES	Mueller, I. I.	NASW 2435	3008
32	OHIO STATE UNIV	Murphy, J. P.	HQ-ES	Mueller, I. I.	NGR 36-008-204	3015
32	OREGON STATE UNIV	Bryson, R. P.	HQ-SM	Schmitt, R. A.	NGL 38-002-020	3075
32	PAN AMERICAN UNIV	Huntress, W. T.	JPL	Glaser, F. M.	NGR 44-087-002	3263
32	PENNSYLVANIA STATE U	Schnetzler, C. C.	GSFC	Petersen, G. W.	NAS 5-22304	3111
32	PENNSYLVANIA STATE U	Miller, M. L.	JSC	McMurtry, G. J.	NAS 9-13406	3116
32	PENNSYLVANIA STATE U	Bryson, R. P.	HQ-SM	Gold, D. P.	NGL 39-009-010	3121
32	PENNSYLVANIA STATE U	Stuart-Alexander, D. E.	HQ-SM	Muan, A.	NSG 7120	3141
32	PRESCOTT COLLEGE	Miller, M. L.	JSC	Gummerman, G. J.	NAS 9-13342	1101
32	PRINCETON UNIVERSITY	Lecrone, D. F.	GSFC	Jenkins, E. B.	NAS 5-22360	2653
32	PRINCETON UNIVERSITY	Bryson, R. P.	HQ-SM	Phinney, R. A.	NGR 31-001-274	2671
32	PRINCETON UNIVERSITY	Kosofsky, L. J.	HQ-SM	Phinney, R. A.	NSG 7080	2685
32	PURDUE UNIVERSITY	Lynch, T. J.	GSFC	Wintz, P. A.	NSG 5010	2064
32	PURDUE UNIVERSITY	Bryson, R. P.	HQ-SM	Lipschutz, M. E.	NGL 15-005-140	2051
32	QUEENS COLLEGE	Harris, J. W.	JSC	Coch, N. K.	NSG 9022	2864
32	RICE UNIVERSITY	Meese, K. J.	GSFC	Anderson, H. R.	NAS 5-9317	3270
32	RICE UNIVERSITY	Harris, J. W.	JSC	Heymann, D.	NGL 44-006-127	3281
32	RICE UNIVERSITY	Harris, J. W.	JSC	Powell, B. N.	NGR 44-006-142	3283
32	ST LAWRENCE UNIV	Short, N. M.	GSFC	Erickson, J. M.	NSG 5018	2880
32	SAN DIEGO STATE UNIV	Bryson, R. P.	HQ-SM	Reh fuss, D. E.	NSG 7026	1271
32	SO DAKOTA STATE UNIV	Gordon, F., Jr.	GSFC	Schmer, F.	NAS 5-20982	3194
32	SO ILL UNIV-CARBONDL	Miller, M. L.	JSC	Gummerman, G. J.	NAS 9-14610	1972
32	STANFORD UNIVERSITY	Crump, E. W.	GSFC	Lyon, R. P.	NAS 5-21884	1315
32	STANFORD UNIVERSITY	Schutt, J. B.	GSFC	Lyon, R. J.	NSG 5050	1400
32	STANFORD UNIVERSITY	Eichelman, W. F.	JSC	Kovach, R. L.	NAS 9-5632	1318
32	STANFORD UNIVERSITY	Dwornik, S. E.	HQ-SL	Howard, H. T.	NGR 05-020-649	1375
32	STANFORD UNIVERSITY	Bryson, R. P.	HQ-SM	Tyler, G. L.	NSG 7029	1401
32	STANFORD UNIVERSITY	Bryson, R. P.	HQ-SM	Nur, A. M.	NSG 7117	1406
32	STATE UNIV NY-BUFFAL	Dwornik, S. E.	HQ-SL	King, J. S.	NGR 33-015-108	2893
32	ST U NY COL-GENESE0	Hardee, S. N.	JSC	Young, R. S.	NAS 9-12770	2917
32	STATE U NY-STONY BRK	Harris, J. W.	JSC	Hartwig, J. B.	NSG 9013	2914
32	STATE U NY-STONY BRK	Kosofsky, L. J.	HQ-SM	Hartung, J. B.	NSG 7036	2913
32	TEXAS A&M UNIVERSITY	Bryson, R. P.	HQ-SM	Rowe, M. W.	NGR 44-001-152	3324
32	TULANE UNIVERSITY	Thomann, G. C.	NSTL	Thein, L. B.	NAS 9-14501	2179
32	TULANE UNIVERSITY	Dwornik, S. E.	HQ-SL	Meyer, J. D.	NGR 19-002-038	2184
32	UNIV ALA-HUNTSVILLE	Bensko, J., Jr.	MSFC	Doyle, F. L.	NAS 8-31345	1069
32	UNIV ALA-TUSCALOOSA	Bensko, J., Jr.	MSFC	Hughes, T. H.	NAS 8-29936	1078
32	UNIV ALA-TUSCALOOSA	Bensko, J., Jr.	MSFC	Stow, S. H.	NAS 8-29937	1079

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32	UNIV ALASKA-FAIRBNKS	Broderick, J.	GSFC	Gedney, L.	NAS 5-20803	1086
32	UNIV ALASKA-FAIRBNKS	Baldwin, R. R.	JSC	Wescott, E. M.	NAS 9-13945	1090
32	UNIV OF ARIZONA	Young, R. S.	HQ-SL	Nagy, B.	NGR 03-002-171	1143
32	UNIV OF ARIZONA	Dwornik, S. E.	HQ-SL	Sonett, C. P.	NGR 03-002-370	1151
32	UNIV OF ARIZONA	Hanley, J. B.	HQ-SM	Strom	NGL 03-002-191	1139
32	UNIV OF ARIZONA	Hanley, J. B.	HQ-SM	Wilkening, L. L.	NSG 7011	1165
32	UNIV OF ARIZONA	Hanley, J. B.	HQ-SM	Whitaker, E. A.	NSG 7014	1166
32	UNIV OF ARIZONA	Hanley, J. B.	HQ-SM	Sonett, C. P.	NSG 7020	1167
32	U ARKANSAS-MONTICELLO	Dwornik, S. E.	HQ-SL	Dehon, R. A.	NGR 04-008-001	1181
32	UNIV CALIF-BERKELEY	Zill, L. P.	ARC	Sherman, F. S.	NCA 2-50302	1425
32	UNIV CALIF-BERKELEY	Stonesifer, G. R.	GSFC	Colwell, R. N.	NAS 5-20969	1412
32	UNIV CALIF-BERKELEY	Gallagher, W. F.	GSFC	Anderson, K. A.	NAS 5-22307	1415
32	UNIV CALIF-BERKELEY	Young, R. S.	HQ-SL	Calvin, M.	NGL 05-003-003	1434
32	UNIV CALIF-BERKELEY	Bryson, R. P.	HQ-SM	Mitchell, J. K.	NGR 05-003-406	1446
32	UNIV CALIF-DAVIS	Mead, G.	HQ-SG	Mcllwain, C. E.	NGR 05-004-006	1484
32	UNIV CALIF-DAVIS	Bryson, R. P.	HQ-SM	Borg, R. J.	NGR 05-004-074	1485
32	UNIV CALIF-L ANGELES	Zill, L. P.	ARC	Coleman, P. J., Jr.	NCA 2-90503	1510
32	UNIV CALIF-L ANGELES	Wales, R. O.	GSFC	Coleman, P. J., Jr.	NAS 5-11674	1496
32	UNIV CALIF-L ANGELES	Murphy, J. P.	HQ-ES	Kaula, W. M.	NSG 7002	1548
32	UNIV CALIF-L ANGELES	Young, R. S.	HQ-SL	Libby, W. F.	NGR 05-007-215	1523
32	UNIV CALIF-L ANGELES	Young, R. S.	HQ-SL	Kaplan, I. R.	NGR 05-007-221	1524
32	UNIV CALIF-L ANGELES	Dwornik, S. E.	HQ-SL	Schubert, G.	NGR 05-007-317	1528
32	UNIV CALIF-L ANGELES	Young, R. S.	HQ-SL	Stampf, J. W.	NGR 05-007-407	1536
32	UNIV CALIF-L ANGELES	Bryson, R. P.	HQ-SM	Stampfer, J. F., Jr.	NGL 05-007-002	1511
32	UNIV CALIF-L ANGELES	Bryson, R. P.	HQ-SM	Kennedy, G. C.	NGL 05-007-006	1515
32	UNIV CALIF-L ANGELES	Strickland, A. T.	HQ-SM	Kaula, W. M.	NGR 05-007-283	1526
32	UNIV CALIF-L ANGELES	Bryson, R. P.	HQ-SM	Wasson, J. T.	NGR 05-007-329	1531
32	UNIV CALIF-L ANGELES	Bryson, R. P.	HQ-SM	Coleman, P. J., Jr.	NGR 05-007-351	1534
32	UNIV CALIF-L ANGELES	Bryson, R. P.	HQ-SM	Kieffer, S. W.	NSG 7052	1550
32	UNIV CALIF-SAN DIEGO	Dwornik, S. E.	HQ-SL	Alfven, H.	NSG 7102	1599
32	UNIV CALIF-SAN DIEGO	Bryson, R. P.	HQ-SM	Arrhenius, G. O.	NGL 05-009-002	1565
32	UNIV CALIF-SAN DIEGO	Bryson, R. P.	HQ-SM	Arnold, J. R.	NGL 05-009-004	1566
32	UNIV CALIF-SAN DIEGO	Bryson, R. P.	HQ-SM	Arnold, J. R.	NGR 05-005-005	1573
32	UNIV CALIF-SAN DIEGO	Bryson, R. P.	HQ-SM	Arnold, J. R.	NSG 7027	1597
32	UNIV CALIF-SAN DIEGO	Bryson, R. P.	HQ-SM	MacDougall, J. D.	NSG 7121	1600
32	UNIV CALIF-S BARBARA	Harris, J. W.	JSC	Tilton, G. R.	NGR 05-010-081	1609
32	UNIV CALIF-S BARBARA	Young, R. S.	HQ-SL	Cloud, P. E.	NGR 05-010-035	1607
32	UNIV CALIF-S BARBARA	Dwornik, S. E.	HQ-SL	Peale, S. J.	NGR 05-010-062	1608
32	UNIV CALIF-S BARBARA	Bryson, R. P.	HQ-SM	Fuller, M. D.	NSG 7122	1610
32	UNIV OF CHICAGO	Dwornik, S. E.	HQ-SL	Turkevich, A. L.	NGR 14-001-135	1991
32	UNIV OF CHICAGO	Young, R. S.	HQ-SL	Anders, E.	NGR 14-001-203	1995
32	UNIV OF CHICAGO	Stuart-Alexander, D. E.	HQ-SM	Anders, E.	NGL 14-001-010	1984
32	UNIV OF CHICAGO	Stuart-Alexander, D. E.	HQ-SM	Grossman, L.	NGR 14-001-249	1999
32	UNIV COLORADO-BOLDR	Broderick, J.	GSFC	Ives, J. D.	NAS 5-20914	1696
32	UNIV COLORADO-BOLDR	Dwornik, S. E.	HQ-SL	Peterson, J. E.	NGR 06-003-199	1712
32	UNIV OF GEORGIA	Dwornik, S. E.	HQ-SL	Howard, H. T.	NGR 11-003-037	1937
32	UNIV OF HAWAII	Strickland, A. T.	HQ-SM	Jefferies, J. T.	NGR 12-001-127	1950
32	UNIV OF HOUSTON	Harris, J. W.	JSC	King, E. A., Jr.	NGL 44-005-184	3355
32	UNIV OF HOUSTON	Young, R. S.	HQ-SL	Oro, J.	NGR 44-005-002	3356
32	UNIV OF HOUSTON	Dwornik, S. E.	HQ-SL	King, E. A., Jr.	NGR 44-005-131	3358
32	UNIV OF HOUSTON	Bryson, R. P.	HQ-SM	King, E. A., Jr.	NGR 44-005-188	3361
32	UNIV OF IDAHO	Bryson, R. P.	HQ-SM	Hall, W. B.	NGR 13-001-014	1953
32	UNIV OF IOWA	Stonesifer, G. R.	GSFC	Hoppin, R. A.	NAS 5-21852	2098
32	UNIV OF IOWA	Miller, M. L.	JSC	Hoppin, R. A.	NAS 9-13313	2099
32	UNIV OF KANSAS	Broderick, J.	GSFC	Haralick, R. M.	NAS 5-20943	2110
32	UNIV OF KANSAS	Eckerman, J.	GSFC	Moore, R. K.	NAS 5-22325	2112
32	UNIV OF KANSAS	Shive, J. C.	GSFC	Moore, R. K.	NAS 5-22384	2113
32	UNIV OF KANSAS	Dwornik, S. E.	HQ-SL	Warnke, D. E.	NGR 17-002-106	2123

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32	UNIV MARYLAND-COL PK	Philpotts, J. A.	GSFC	Weidner, J. R.	NGR 21-002-368	2255
32	UNIV MARYLAND-COL PK	Rango, A.	GSFC	Weidner, J. R.	NGR 21-002-399	2259
32	UNIV MARYLAND-COL PK	Salomonson, V. V.	GSFC	Ragan, R. M.	NSG 5017	2275
32	UNIV MARYLAND-COL PK	Cressy, P. J.	GSFC	Sommer, S. E.	NSG 5047	2278
32	UNIV MARYLAND-COL PK	Alexander, D. E.	HQ-SM	Wasilewski, P.	NSG 7017	2283
32	UNIV MARYLAND-COL PK	Kosofsky, L. J.	HQ-SM	Adler, I.	NSG 7046	2284
32	UNIV OF MASS-AMHERST	Dwornik, S. E.	HQ-SL	Hartshorn, J. H.	NGR 22-010-054	2448
32	UNIV OF MASS-AMHERST	Dwornik, S. E.	HQ-SL	McGill, G. E.	NGR 22-010-076	2449
32	UNIV MICH-ANN ARBOR	Dwornik, S. E.	HQ-SL	Smith, C. I.	NGR 23-005-563	2498
32	UNIV MICH-ANN ARBOR	Bryson, R. P.	HQ-SM	Evans, B. J.	NGR 23-005-537	2494
32	U MINN-MNPLS-ST PAUL	Harris, J. W.	JSC	Banerjee, S. K.	NGR 24-005-248	2542
32	UNIV OF NEVADA-RENO	Miller, M. L.	JSC	Quade, J.	NAS 9-13274	2624
32	UNIV OF NEW MEXICO	Dwornik, S. E.	HQ-SL	Elston, W. E.	NGR 32-004-062	2730
32	UNIV OF NEW MEXICO	Hanley, J. B.	HQ-SM	Elston, W. E.	NGL 32-004-011	2725
32	UNIV OF NEW MEXICO	Hanley, J. B.	HQ-SM	Keil, K.	NGL 32-004-064	2728
32	UNIV OF NEW MEXICO	Hanley, J. B.	HQ-SM	Elston, W. E.	NSG 7066	2736
32	UNIV OREGON-EUGENE	Teegarden, D. L., Jr.	JSC	Blank, H. R.	NAS 9-9690	3078
32	UNIV OREGON-EUGENE	Bryson, R. P.	HQ-SM	Weill, D. F.	NGR 38-003-020	3080
32	UNIV OF PENNSYLVANIA	Kosofsky, L. J.	HQ-SM	Friel, J. J.	NSG 7119	3147
32	UNIV OF PITTSBURGH	Dwornik, S. E.	HQ-SL	Hapke, B.	NGR 39-011-146	3160
32	UNIV OF PITTSBURGH	Alexander, D. E.	HQ-SM	Hapke, B. W.	NGL 39-011-085	3156
32	UNIV OF PITTSBURGH	Bryson, R. P.	HQ-SM	Fuller, M.	NGR 39-011-156	3161
32	UNIV OF SANTA CLARA	Zill, L. P.	ARC	Barker, W. A.	NCA 2-85408	1624
32	UNIV OF SANTA CLARA	Quaide, W. L.	ARC	Greeley, R.	NGR 05-017-027	1635
32	UNIV OF SANTA CLARA	Dwornik, S. E.	HQ-SL	Greeley, R.	NGR 05-017-037	1638
32	UNIV OF SANTA CLARA	Bryson, R. P.	HQ-SM	Greeley, R.	NSG 7013	1641
32	UNIV OF SO CAROLINA	Dwornik, S. E.	HQ-SL	Nummedal, D.	NSG 7076	3192
32	UNIV TEXAS-AUSTIN	Marsh, J. G.	GSFC	Tapley, B. D.	NGR 44-012-283	3401
32	UNIV TEXAS-AUSTIN	Eichelman, W. F.	JSC	Duennebier, F. D.	NAS 9-14405	3377
32	UNIV TEXAS-AUSTIN	Harris, J. W.	JSC	Gose, W. A.	NSG 9021	3406
32	UNIV TEXAS-AUSTIN	Stanley, H. R.	WFC	Tapley, B. D.	NAS 6-2454	3368
32	UNIV TEXAS-AUSTIN	Dwornik, S. E.	HQ-SL	Ingerson, F. E.	NGR 44-012-194	3386
32	UNIV TEXAS-AUSTIN	Young, R. S.	HQ-SL	Parker, P. L.	NGR 44-012-225	3391
32	UNIV TEXAS-AUSTIN	Dwornik, S. E.	HQ-SL	Devaucouleurs, G. H.	NGR 44-012-279	3399
32	UNIV TEXAS-AUSTIN	Bryson, R. P.	HQ-SM	Clabaugh, S. E.	NGL 44-012-045	3381
32	UNIV TEXAS-AUSTIN	Strickland, A. T.	HQ-SM	Silverberg, E. C.	NGR 44-012-165	3385
32	UNIV TEXAS-GALVESTON	Strickland, A. T.	HQ-SM	Lammlein, D. R.	NSG 7074	3436
32	UNIV OF UTAH	Broderick, J.	GSFC	Nackowski, M.	NAS 5-20955	3451
32	UNIV OF UTAH	Lafferty, P. E.	JSC	Ward, S. H.	NAS 9-12168	3456
32	UNIV OF UTAH	Miller, M. L.	JSC	Jensen, M. L.	NAS 9-13322	3457
32	UNIV OF UTAH	Harris, J. W.	JSC	Ward, S. H.	NGR 45-003-090	3461
32	UNIV OF UTAH	Harris, J. W.	JSC	Nash, W. P.	NSG 9024	3468
32	UNIV OF UTAH	Dwornik, S. E.	HQ-SL	Wilson, R. C.	NGR 45-003-095	3463
32	UNIV OF UTAH	Bryson, R. P.	HQ-SM	Ward, S. H.	NSG 7090	3467
32	UNIV OF VIRGINIA	Dwornik, S. E.	HQ-SL	Howard, A.	NGR 47-005-172	3571
32	UNIV OF VIRGINIA	Bryson, R. P.	HQ-SM	Allen, R. O.	NGR 47-005-176	3572
32	UNIV OF WASHINGTON	Horz, F.	JSC	Brownlee, D. E.	NAS 9-13743	3636
32	UNIV OF WASHINGTON	Dwornik, S. E.	HQ-SL	Vgolihi, F. C.	NGR 48-002-153	3651
32	UNIV WISC-PARKSIDE	Dwornik, S. E.	HQ-SL	Smith, E. I.	NGR 50-009-001	3706
32	UNIV OF WYOMING	Gordon, F., Jr.	GSFC	Houston, R. S.	NAS 5-21799	3710
32	UNIV OF WYOMING	Gordon, F., Jr.	GSFC	Houston, R. S.	NAS 5-21818	3711
32	UNIV OF WYOMING	Miller, M. L.	JSC	Houston, R. S.	NAS 9-13298	3712
32	UTAH STATE UNIV	Young, R. S.	HQ-SL	Swanson, L. W.	NSG 7038	3474
32	VIRGINIA POLY INST	Dwornik, S. E.	HQ-SL	Unavailable	NSG 7111	3627
32	VIRGINIA STATE COL	Dwornik, S. E.	HQ-SL	Gipson, M., Jr.	NGR 47-014-004	3629
32	WASHINGTON UNIVERSTY	Kelly, W. L.	LARC	Arvidson, R. E.	NSG 1084	2607
32	WASHINGTON UNIVERSTY	Dwornik, S. E.	HQ-SL	Arvidson, R. E.	NSG 7087	2610
32	WASHINGTON UNIVERSTY	Hosterman, J. W.	HQ-SM	Hohenberg, C. M.	NSG 7016	2609

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32	WEST TEXAS ST UNIV	Dwornik, S. E.	HQ-SL	Underwood, J. R.	NGR 44-015-003	3442
32	WOODSHOLE OCEAN INST	Hardee, S. N.	JSC	Bowin, C.	NAS 9-12563	2451
32	WOODSHOLE OCEAN INST	Hardee, S. N.	JSC	Bryan, W. B.	NAS 9-12564	2452
32	WOODSHOLE OCEAN INST	McGoogan, J. T.	WFC	Bowin, C.	NAS 6-2585	2450
32	YALE UNIVERSITY	Dwornik, S. E.	HQ-SL	Skinner, B. J.	NGR 07-004-157	1757
32	YALE UNIVERSITY	Bryson, R. P.	HQ-SM	Skinner, B. J.	NGL 07-004-103	1753
32	YALE UNIVERSITY	Kosofsky, L. J.	HQ-SM	Turekian, K. K.	NGR 07-004-166	1758
33	CHESAPEAKE COLLEGE	Exton, R. J.	LARC	Paul, F. W.	NSG 1096	2196
33	CITY COLLEGE OF N Y	Eckerman, J.	GSFC	Pierson, W. J.	NAS 5-20041	2739
33	CITY COLLEGE OF N Y	Mueller, J. L.	GSFC	Pierson, W. J.	NAS 5-22392	2740
33	CITY COLLEGE OF N Y	Brown, S. C.	MSFC	Pierson, W. J.	NAS 8-29616	2742
33	COLUMBIA UNIVERSITY	Stanley, H. R.	WFC	Kuo, J. T.	NAS 6-2455	2760
33	NEW YORK UNIVERSITY	Brown, S. C.	MSFC	Pierson, W. J.	NAS 8-29578	2836
33	NO CAROLINA STATE U	Stanley, H. R.	WFC	Hiser, H. W.	NAS 6-2617	2945
33	OREGON STATE UNIV	Mueller, J. L.	GSFC	Zumeveld, R. V.	NAS 5-22319	3074
33	TEXAS A&M UNIVERSITY	Houis, W. A.	GSFC	Creasteau, J.	NAS 5-20877	3299
33	UNIV ALASKA-FAIRBNKS	Crump, E. W.	GSFC	Stringer, W.	NAS 5-20959	1088
33	UNIV CALIF-L ANGELES	Stanley, H. R.	WFC	Kaula, W. M.	NAS 6-2463	1499
33	UNIV OF DELAWARE	Crump, E. W.	GSFC	Klemas, V.	NAS 5-20983	1764
33	UNIV MARYLAND-COL PK	Marini, J. W.	GSFC	Harger, R. O.	NGR 21-002-433	2264
39	ALABAMA A&M UNIV	McDonough, G. F.	MSFC	Manger, M. C.	NGR 01-001-025	1005
39	ALCORN STATE UNIV	Wolverton, B. C.	NSTL	Naqvi, S. M.	NSG 8005	2554
39	AMERICAN UNIVERSITY	Schubert, J.	GSFC	MacLeod, N. H.	NAS 5-21970	1768
39	AMERICAN UNIVERSITY	Johnson, R. W.	LARC	Anderson, R. R.	NAS 1-12209	1767
39	BETHUNE-COOKMAN COL	Hammond, T. M.	KSC	Poondi, P.	NGR 10-022-001	1827
39	BRIGHAM YOUNG UNIV	Berko, F. W.	HQ-SG	Jones, D. E.	NGR 45-001-011	3445
39	BROWN UNIVERSITY	Maestrello, L.	LARC	Liu, J. T.	NSG 1076	3176
39	CALIF INST OF TECH	Lowman, P. D.	GSFC	Allen, C. R.	NSG 5058	1232
39	CALIF INST OF TECH	Williams, T. S., Jr.	LARC	Anderson, D. L.	NAS 1-9703	1183
39	CLEMSON UNIV-CLEMSON	Barnett, T. L.	JSC	Haun, J. R.	NAS 9-14006	3182
39	COLORADO SCH OF MINE	Vitale, J. A.	HQ-P	Lee, K.	NGL 06-001-015	1660
39	COLORADO STATE UNIV	Thekaekara, M.	GSFC	Vonder Haar, T. H.	NAS 5-22372	1664
39	COLORADO STATE UNIV	Barnett, T. L.	JSC	Smith, J. A.	NAS 9-14467	1670
39	COLORADO STATE UNIV	Turner, R. E.	MSFC	Sadeh, W. Z.	NAS 8-28590	1665
39	CORNELL UNIVERSITY	Joosten, R. E.	JSC	Hardy, E. E.	NAS 9-13364	2792
39	CORNELL UNIVERSITY	Vitale, J. A.	HQ-P	Liang, T.	NGL 33-010-171	2801
39	DC TEACHERS COLLEGE	Westrom, J. L.	GSFC	Bever, R. S.	NGR 09-053-003	1779
39	DARTMOUTH COLLEGE	Jastrow, R.	GSFC	Huke, R. E.	NSG 5014	2629
39	DILLARD UNIVERSITY	Paludan, C. T.	MSFC	Rogers, R.	NSG 8018	2156
39	DILLARD UNIVERSITY	Pohly, J. G.	HQ-P	Rogers, R.	NGR 19-015-001	2155
39	FEDERAL CITY COLLEGE	Nava, D. F.	GSFC	Phelps, H. L.	NGR 09-050-019	1784
39	FLORIDA A&M UNIV	Schehl, T. A.	KSC	Cottrell, P. T.	NGR 10-010-002	1828
39	FLORIDA INST OF TECH	Lee, W. H.	KSC	Nevin, T. A.	NGR 10-015-008	1833
39	FLORIDA TECH UNIV	Lee, W. H.	KSC	Sweet, H. C.	NGR 10-019-004	1839
39	FLORIDA TECH UNIV	Lee, W. H.	KSC	Stout, I. J.	NGR 10-019-009	1840
39	GEORGIA INST OF TECH	Paludan, C. T.	MSFC	Dees, J. W.	NAS 8-30653	1896
39	GREENVILLE COLLEGE	Rogowski, R. S.	LARC	Richards, R. R.	NSG 1097	1955
39	HOWARD UNIVERSITY	Pohly, J. G.	HQ-P	Ferguson, G. A.	NGL 09-011-046	1810
39	ILL INST OF TECH	Bryson, R. P.	HQ-SM	Higgins, G. T.	NGR 14-004-049	1956
39	JACKSON STATE UNIV	Wolverton, B. C.	MSFC	Sekhon, B. S.	NGR 25-011-005	2556
39	JACKSON STATE UNIV	Wolverton, B. C.	MSFC	Perkins, J.	NSG 8015	2558
39	JACKSON STATE UNIV	Wolverton, B. C.	NSTL	Sekhon, B. S.	NSG 8023	2559
39	JACKSON STATE UNIV	Wolverton, B. C.	NSTL	Shore, F.	NSG 8026	2560
39	JACKSON STATE UNIV	Joyce, A. T.	NSTL	Nelson, F. R.	NSG 9016	2561
39	KANSAS STATE UNIV	Pitts, D. E.	JSC	Feyerherm, A. M.	NAS 9-14282	2102
39	KANSAS STATE UNIV	Barnett, T. L.	JSC	Feyerherm, A. M.	NAS 9-14533	2103
39	LA STATE U-BAT ROUGE	Paludan, C. T.	MSFC	Maples, D.	NAS 8-30620	2165
39	LA STATE U-BAT ROUGE	Redding, E. R.	HQ-P	Whitehurst, C. A.	NGL 19-001-097	2166

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39	LA STATE U-BAT ROUGE	Vitale, J. A.	HQ-P	Whitehurst, C. A.	NGL 19-001-105	2167
39	UNIV OF NEW ORLEANS	McDonough, G. F.	MSFC	Saussy, G. A.	NAS 8-28955	2185
39	MASS INST OF TECH	Williams, T. S., Jr.	LARC	Biemann, K.	NAS 1-9684	2328
39	MICHIGAN STATE UNIV	Vitale, J. A.	HQ-P	Boylan, M. G.	NGL 23-004-083	2456
39	MISSISSIPPI STATE U	McDonough, G. F.	MSFC	McKee, J. C., Jr.	NAS 8-29036	2563
39	MISSISSIPPI STATE U	Daniels, J. L., Jr.	MSFC	Miller, W. F.	NAS 8-30623	2565
39	MISSISSIPPI STATE U	Redding, E. R.	HQ-P	Brown, L. R.	NGL 25-001-040	2570
39	MISSISSIPPI STATE U	Vitale, J. A.	HQ-P	Bouchillon, C. W.	NGL 25-001-054	2571
39	NEW MEX ST U-LAS CR	Fenner, R. G.	JSC	Henry, D. G.	NAS 9-95435	2703
39	NEW MEX ST U-LAS CR	Fenner, R. G.	JSC	Henry, D. G.	NAS 9-95451	2704
39	NEW YORK UNIVERSITY	Neustadter, H. E.	LERC	Hoydysh, W. G.	NGR 33-016-197	2844
39	OHIO STATE UNIV	Hirschmann, E.	GSFC	Founty, R. A.	NAS 5-20521	3004
39	OLD DOMINION UNIV	Northam, G. B.	LARC	Bandy, A. R.	NGR 47-003-087	3522
39	OLD DOMINION UNIV	Orr, H. D.	LARC	Becher, J.	NSG 1041	3530
39	OREGON STATE UNIV	Crump, E. W.	GSFC	Smionson, G. H.	NAS 5-21831	3073
39	OREGON STATE UNIV	Vitale, J. A.	HQ-P	Schrumpf, B. J.	NGL 38-002-053	3077
39	PAN AMERICAN UNIV	Potter, A. E.	JSC	Lemaster, E. W.	NSG 9015	3264
39	PAN AMERICAN UNIV	Pohly, J. G.	HQ-P	Le Master, E. W.	NGR 44-087-001	3262
39	PENNSYLVANIA STATE U	Szajna, E. F.	GSFC	McMurtry, G. J.	NAS 5-23133	3112
39	PRAIRIE VIEW A&M U	Potter, A. E.	JSC	Sohel, M. S.	NSG 9006	3267
39	PRINCETON UNIVERSITY	Mascy, A. C.	ARC	Fels, M. F.	NSG 2037	2680
39	PURDUE UNIVERSITY	Freden, S. C.	GSFC	McDonald, R. B.	NAS 5-21773	2042
39	PURDUE UNIVERSITY	Joosten, R. E.	JSC	Silva, L. F.	NAS 9-13301	2046
39	PURDUE UNIVERSITY	Joosten, R. E.	JSC	Hoffer, R. M.	NAS 9-13380	2047
39	PURDUE UNIVERSITY	Potter, A. E.	JSC	Landgrebe, D. A.	NAS 9-14016	2048
39	PURDUE UNIVERSITY	Pao, S. P.	LARC	Kentzer, C. P.	NGR 15-005-174	2059
39	PURDUE UNIVERSITY	Maurer, H. E.	WFC	Phillips, T. L.	NAS 6-2613	2045
39	PURDUE UNIVERSITY	Vitale, J. A.	HQ-P	Weismiller, R. A.	NGL 15-005-186	2053
39	RICE UNIVERSITY	Eichelman, W. F.	JSC	Low, F. J.	NAS 9-10428	3274
39	SAN JOSE STATE UNIV	Arvesen, J. C.	ARC	Weaver, E. C.	NGR 05-046-015	1302
39	SAVANNAH STATE COL	Perkins, E. E.	KSC	Ghuman, G. S.	NSG 803	1932
39	SO DAKOTA STATE UNIV	Vitale, J. A.	HQ-P	Myers, V. I.	NGL 42-003-007	3196
39	SO UNIV-NEW ORLEANS	Pohly, J. G.	HQ-P	Lucas, E. C.	NGR 19-014-001	2178
39	STANFORD UNIVERSITY	Zill, L. P.	ARC	Leckie, J. O.	NCA 2-45501	1324
39	STANFORD UNIVERSITY	Bryson, R. P.	HQ-SM	Kovach, R. L.	NGL 05-020-232	1350
39	STATE U NY-STONY BRK	Williams, T. S., Jr.	LARC	Owen, T.	NAS 1-10493	2895
39	STATE U NY-STONY BRK	Gordon, S.	LERC	Berlad, A. L.	NGR 33-015-163	2903
39	TEXAS A&M UNIVERSITY	Freden, S. C.	GSFC	Rouse, J. W., Jr.	NAS 5-21857	3300
39	TEXAS A&M UNIVERSITY	Potter, A. E.	JSC	Rouse, J. W., Jr.	NAS 9-13904	3310
39	TEXAS A&M UNIVERSITY	Potter, A. E.	JSC	Rouse, J. L.	NAS 9-14197	3311
39	TEXAS A&M UNIVERSITY	Potter, A. E.	JSC	Harlan, C.	NAS 9-14470	3313
39	TEXAS A&M UNIVERSITY	McKain, G. E.	JSC	Simmons, R.	NAS 9-14514	3316
39	TEXAS A&M UNIVERSITY	Zeitler, E.	JSC	Shepard, P. J.	NAS 9-14583	3318
39	TEXAS A&M UNIVERSITY	King, R. B.	LERC	Kuykendahl, W.	NAS 3-17508	3295
39	TEXAS A&M UNIVERSITY	Vitale, J. A.	HQ-P	Rouse, J. W., Jr.	NGL 44-001-001	3321
39	UNIV ALA-HUNTSVILLE	Paludan, C. T.	MSFC	Doyle, F. L.	NAS 8-30216	1052
39	UNIV ALA-HUNTSVILLE	Gravette, M. C.	MSFC	Schroer, B. J.	NAS 8-30885	1061
39	UNIV ALA-HUNTSVILLE	West, G. S., Jr.	MSFC	Hung, R. J.	NAS 8-31171	1064
39	UNIV ALASKA-FAIRBNKS	Oseroff, H.	GSFC	Lent, P.	NAS 5-20915	1087
39	UNIV ALASKA-FAIRBNKS	Vitale, J. A.	HQ-P	Miller, J. M.	NGL 02-001-092	1092
39	UNIV OF ARIZONA	Stonesifer, G. R.	GSFC	Smith, E. L., Jr.	NAS 5-21820	1109
39	UNIV OF ARIZONA	Vitale, J. A.	HQ-P	Beckel, C. L.	NGL 03-002-313	1140
39	UNIV ARKANSAS-FAYETV	Szajna, E. F.	GSFC	MacDonald, H.	NAS 5-20810	1175
39	U ARKANSAS-PINE BLUF	Potter, A. E.	JSC	Davis, L. A., Jr.	NSG 9002	1182
39	UNIV CALIF-BERKELEY	Wrigley, R. C.	ARC	Horne, A. J.	NSG 2003	1464
39	UNIV CALIF-BERKELEY	Crump, E. W.	GSFC	Colwell, R. N.	NAS 5-21827	1414
39	UNIV CALIF-BERKELEY	Forbes, C. D.	JSC	Colwell, R. N.	NAS 9-14419	1421
39	UNIV CALIF-BERKELEY	Forbes, C. D.	JSC	Colwell, R. N.	NAS 9-14420	1422

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39	UNIV CALIF-BERKELEY	Erb, R. B.	JSC	Lauer, D.	NAS 9-14452	1423
39	UNIV CALIF-BERKELEY	Dietrich, J. W.	JSC	Nichols, J. D.	NAS 9-14565	1424
39	UNIV CALIF-BERKELEY	Pinkler, D. G.	HQ-EP	Colewell, R. N.	NGL 05-003-404	1439
39	UNIV CALIF-BERKELEY	Bryson, R. P.	HQ-SM	Unavailable	NSG 7127	1471
39	UNIV CALIF-L ANGELES	Berko, F. W.	HQ-SG	Coleman, P. J., Jr.	NGL 05-007-004	1513
39	UNIV CALIF-SAN DIEGO	Carpenter, L. H.	GSFC	Berger, J.	NGR 05-009-246	1588
39	UNIV COLORADO-BOLDR	Vitale, J. A.	HQ-P	Ives, J. D.	NGL 06-003-200	1706
39	UNIV OF DELAWARE	Johnson, R. W.	LARC	Klemas, V.	NAS 1-12304	1763
39	UNIV OF DELAWARE	Collins, V. G.	LARC	Klemas, V.	NSG 1149	1766
39	UNIV OF FLORIDA	Toft, P. D.	KSC	Bartholic, J. F.	NAS10-8560	1845
39	UNIV OF FLORIDA	Toft, P. D.	KSC	Bartholic, J. F.	NAS10-8774	1846
39	UNIV OF HOUSTON	Williams, T. S., Jr.	LARC	Oro, J.	NAS 1-9685	3331
39	UNIV OF KANSAS	Stonesifer, G. R.	GSFC	Kanemasu, E. T.	NAS 5-21822	2111
39	UNIV OF KANSAS	Hatcher, N. M.	JSC	Ulaby, F. T.	NAS 9-10261	2114
39	UNIV OF KANSAS	Mason, C. C.	JSC	Ulaby, F. T.	NAS 9-14052	2119
39	UNIV OF KANSAS	Erb, R. B.	JSC	Haralick, R. M.	NAS 9-14453	2120
39	UNIV OF KANSAS	Vitale, J. A.	HQ-P	Barr, B. G.	NGL 17-004-024	2121
39	UNIV OF KENTUCKY	Paludan, C. T.	MSFC	Graves, D. H.	NAS 8-31006	2142
39	UNIV MARYLAND-COL PK	Hoell, J. M.	LARC	Davis, D. D.	NSG 1075	2270
39	UNIV MARYLAND-COL PK	Alfonsi, P. J.	WFC	Harmon, D. M.	NSG 6001	2282
39	UNIV OF MIAMI	Bland, R. A.	KSC	Veziroglu, T. N.	NAS10-8498	1864
39	UNIV OF MIAMI	Bland, R. A.	KSC	Veziroglu, T. N.	NAS10-8740	1865
39	UNIV OF MIAMI	Bland, R. A.	KSC	Hirschberg, J. G.	NAS10-8795	1866
39	U MINN-MNPLS-ST PAUL	Vitale, J. A.	HQ-P	Cahill, L. J., Jr.	NGL 24-005-263	2537
39	UNIV OF MONTANA	Sebesta, P. D.	ARC	Craighead, J. J.	NSG 2030	2612
39	UNIV NEBRASKA-LINCLN	Freden, S. C.	GSFC	Drew, J. V.	NAS 5-21756	2614
39	UNIV NEBRASKA-LINCLN	Vitale, J. A.	HQ-P	Drew, J. V.	NGL 28-004-020	2617
39	UNIV OF NEVADA-RENO	Rango, A.	GSFC	Squires, P.	NAS 5-20954	2621
39	UNIV SO MISSISSIPPI	Vitale, J. A.	NSTL	Pinson, J. W.	NGL 25-005-007	2577
39	UNIV TENNESSEE-KNOXV	Cummings, R. E.	MSFC	Gonzalez, R. C.	NAS 8-30878	3215
39	UNIV TENNESSEE-KNOXV	Escue, W. T.	MSFC	Rehder, J. B.	NAS 8-31143	3217
39	UNIV OF UTAH	Tuttle, F. B.	HQ-FE	Ridd, M. K.	NASW 2648	3458
39	UNIV OF VIRGINIA	Crump, E. W.	GSFC	Dolan, R.	NAS 5-20999	3564
39	UNIV WISC-MADISON	Vitale, J. A.	HQ-P	Suomi, V. E.	NGL 50-002-114	3689
39	UNIV WISC-MADISON	Vitale, J. A.	HQ-P	Clapp, J. L.	NGL 50-002-127	3690
39	VIRGINIA POLY INST	Bettle, J. F.	WFC	Pettry, D. E.	NAS 6-1863	3595
39	VIRGINIA POLY INST	Scott, J. H.	WFC	Pettry, D. E.	NAS 6-2388	3596
39	WASHINGTON UNIVERSTY	Williams, T. S., Jr.	LARC	Arvidson, R. E.	NAS 1-13889	2596
39	WEST VIRGINIA UNIV	Kirby, C. E.	LARC	Steinhardt, E. J.	NGR 49-001-061	3663
41	ALABAMA A&M UNIV	Pohly, J. G.	HQ-P	Lowsine, L.	NGR 01-001-013	1001
41	ALABAMA A&M UNIV	Pohly, J. G.	HQ-P	Saha, H.	NGR 01-001-024	1004
41	AUBURN UNIV-AUBURN	Spearman, M. L.	LARC	Greaux, A. E.	NSG 1002	1030
41	AUBURN UNIV-AUBURN	Duncan, J. R., Jr.	MSFC	Bennett, A. G.	NAS 8-30248	1021
41	BOSTON UNIVERSITY	Yates, E. C., Jr.	LARC	Morino, L.	NGR 22-004-030	2295
41	CALIF INST OF TECH	Olson, L. E.	ARC	Coles, D. E.	NGL 05-002-229	1208
41	CALIF INST OF TECH	Sandercock, D. M.	LERC	Rannie, W. D.	NGL 05-002-136	1202
41	CAL STATE U-CHICO	Zill, L. P.	ARC	Huntsfinger, R.	NCA 2-10502	1245
41	CAL STATE U-CHICO	Zill, L. P.	ARC	Sours, C. F.	NCA 2-10504	1246
41	CAL STATE U-LG BEACH	Carr, L. W.	ARC	Cebeci, T.	NAS 1-13656	1253
41	CAL STATE U-SACRAMEN	Zill, L. P.	ARC	Luther, L. C.	NCA 2-55502	1258
41	CASE WESTERN RESERVE	Stroud, W. J.	LARC	Kicher, T. P.	NGL 36-003-002	2974
41	CASE WESTERN RESERVE	Anderson, B. H.	LERC	Reshotko, E.	NGR 36-027-038	2978
41	CASE WESTERN RESERVE	Bishop, A. R.	LERC	Reshotko, E.	NGR 36-027-064	2983
41	CASE WESTERN RESERVE	Bober, L. J.	LERC	Reshotko, E.	NSG 3058	2991
41	CASE WESTERN RESERVE	Sockol, P. M.	LERC	Reshotko, E.	NSG 3062	2992
41	CATHOLIC UNIVERSITY	Deissler, R. G.	LERC	Ling, S. C.	NGR 09-005-099	1774
41	CHRISTPHR NEWPRT COL	Morris, G. J.	LARC	Roby, A. B.	NAS 1-13423	3477
41	CHRISTPHR NEWPRT COL	Jewel, J. W., Jr.	LARC	Unavailable	NAS 1-13913	3478

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41	CHRISTPHR NEWPRT COL	Morris, G. J.	LARC	Roby, A. B.	NAS 1-14034	3479
41	CITY COLLEGE OF N. Y.	Montgomery, R. C.	LARC	Mekel, R.	NSG 1169	2750
41	CLEMSON UNIV-CLEMSON	Doggett, R. V., Jr.	LARC	Rudisill, C. S.	NGR 41-001-027	3183
41	CLEMSON UNIV-CLEMSON	Abel, I.	LARC	Rudisill, C. S.	NSG 1125	3186
41	COLORADO STATE UNIV	Zill, L. P.	ARC	Sandborn, V. A.	NCA 2-65502	1671
41	COLUMBIA UNIVERSITY	Mixson, J. S.	LARC	Vaicaitis, R.	NSG 1059	2778
41	CORNELL UNIVERSITY	Presley, L. L.	ARC	Wehausen, J. V.	NGL 33-010-057	2797
41	CORNELL UNIVERSITY	Stephens, W. B.	LARC	Gallagher, R. H.	NGL 33-010-070	2799
41	CORNELL UNIVERSITY	Barger, R. L.	LARC	Seebass, A. R.	NGR 33-010-203	2817
41	CORNELL UNIVERSITY	Marek, C. J.	LERC	Gouldin, F. C.	NSG 3019	2821
41	GEORGE WASHINGTON U	Margolis, K.	LARC	Liebowitz, H.	NGR 09-010-064	1793
41	GEORGE WASHINGTON U	Mulac, R. W.	LARC	Liebowitz, H.	NGR 09-010-074	1794
41	GEORGE WASHINGTON U	Anderson, R. A.	LARC	Liebowitz, H.	NGR 09-010-078	1795
41	GEORGE WASHINGTON U	Margolis, K.	LARC	Liebowitz, H.	NGR 09-010-085	1796
41	GEORGE WASHINGTON U	Suit, W. T.	LARC	Liebowitz, H.	NSG 1161	1802
41	GEORGIA INST OF TECH	Peterson, J. P.	LARC	Horton, W. H.	NGL 11-002-096	1904
41	GEORGIA INST OF TECH	Evans, J. S.	LARC	Wu, J. C.	NGR 11-002-157	1906
41	GEORGIA INST OF TECH	Boatright, W. B.	LARC	Bangert, L. H.	NGR 11-002-177	1908
41	GEORGIA INST OF TECH	Hammond, C. E.	LARC	Pierce, G. A.	NGR 11-002-185	1910
41	GEORGIA INST OF TECH	Carter, J. E.	LARC	Wu, J. C.	NSG 1004	1911
41	GEORGIA INST OF TECH	Huff, R. G.	LERC	Strahle, W. C.	NAS 3-17861	1883
41	GEORGIA INST OF TECH	Priem, R. J.	LERC	Zinn, B. T.	NGL 11-002-085	1903
41	GEORGIA INST OF TECH	Feiler, C. E.	LERC	Zinn, B. T.	NSG 3036	1918
41	HAMPTON INSTITUTE	Jewel, J. W., Jr.	LARC	Williams, G. K.	NAS 1-12445	3492
41	HARVEY MUDD COLLEGE	Orloff, K.	ARC	Woodson, T. T.	NAS 2-8921	1262
41	HARVEY MUDD COLLEGE	Orloff, K.	ARC	Woodson, T. T.	NAS 2-8925	1263
41	HOWARD UNIVERSITY	Martz, C. W.	LARC	Bainum, P. M.	NSG 1181	1820
41	ILL INST OF TECH	Beckwith, I. E.	LARC	Nagib, H. M.	NSG 1120	1957
41	IOWA STATE UNIV	Zill, L. P.	ARC	Cook, W. J.	NCA 2-40406	2074
41	IOWA STATE UNIV	Zill, L. P.	ARC	Anderson, D. A.	NCA 2-40503	2077
41	IOWA STATE UNIV	Zill, L. P.	ARC	Anderson, D. A.	NCA 2-40505	2079
41	IOWA STATE UNIV	Zill, L. P.	ARC	Cook W. J.	NCA 2-40506	2080
41	IOWA STATE UNIV	Rakich, J. V.	ARC	Tannehill, J. C.	NGR 16-002-038	2082
41	IOWA STATE UNIV	Rossow, V. J.	ARC	Wilson, L. N.	NSG 2040	2083
41	IOWA STATE UNIV	Chapman, G. T.	ARC	James, W. D.	NSG 2091	2084
41	IOWA STATE UNIV	Sockol, P. M.	LERC	Serovy, G. K.	NSG 3033	2085
41	ISRAEL INST OF TECH	Dixon, S. C.	LARC	Haftka, R. T.	NGR 52-012-008	3724
41	ISRAEL INST OF TECH	Abel, I.	LARC	Nissim, E.	NSG 7072	3725
41	ISRAEL INST OF TECH	Bush, H. G.	LARC	Weller, T.	NSG 7083	3726
41	LEHIGH UNIVERSITY	Deets, D. A.	FRC	Johnson, S. H.	NSG 4005	3107
41	MASS INST OF TECH	Rabbott, J. P., Jr.	ARC	Ham, N. D.	NAS 2-7262	2332
41	MASS INST OF TECH	Rabbott, J. P., Jr.	ARC	Faulkner, H. B.	NAS 2-7620	2333
41	MASS INST OF TECH	Williams, L. J.	ARC	Simpson, R. W.	NAS 2-8157	2334
41	MASS INST OF TECH	Wempe, T. E.	ARC	Curry, R. E.	NGR 22-009-733	2394
41	MASS INST OF TECH	Mascy, A. C.	ARC	Simpson, R. W.	NSG 2024	2417
41	MASS INST OF TECH	Rabbott, J. P., Jr.	ARC	Whittaker, H. P.	NSG 2044	2419
41	MASS INST OF TECH	Szalai, K. J.	FRC	Whittaker, H. P.	NGL 22-009-548	2369
41	MASS INST OF TECH	Whitten, J. B.	LARC	Young, L. R.	NGL 22-009-025	2362
41	MASS INST OF TECH	Reid, H. J., Jr.	LARC	Simpson, R. W.	NGL 22-009-640	2371
41	MASS INST OF TECH	Queijo, M. J.	LARC	Young, L. R.	NGR 22-009-701	2388
41	MASS INST OF TECH	Card, M. F.	LARC	Mar, J. W.	NGR 22-009-781	2399
41	MASS INST OF TECH	Hoad, D. R.	LARC	Widnall, S. E.	NGR 22-009-818	2407
41	MASS INST OF TECH	Elliott, J. R.	LARC	Athens, M.	NSG 1018	2410
41	MASS INST OF TECH	Reed, W. H., III	LARC	Dugundji, J.	NSG 1051	2412
41	MASS INST OF TECH	Montgomery, R. C.	LARC	Willsky, A. S.	NSG 1112	2413
41	MASS INST OF TECH	Mace, W. D.	LARC	Odoni, A. R.	NSG 1123	2414
41	MASS INST OF TECH	McNally, W. D.	LERC	Kerrebrock, J. L.	NGL 22-009-383	2367
41	MASS INST OF TECH	Siewert, R. D.	LERC	Witmer, E. A.	NGR 22-009-339	2375

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41	MASS INST OF TECH	Baumeister, K. J.	LERC	Ingard, K. U.	NGR 22-009-805	2406
41	MASS INST OF TECH	Orange, T. W.	LERC	Kerrebrock, J. L.	NSG 3006	2421
41	MICHIGAN STATE UNIV	Hardin, J. C.	LARC	Foss, J. F.	NGR 23-004-091	2457
41	MICHIGAN STATE UNIV	Fischer, M. C.	LARC	Foss, J. F.	NSG 1138	2458
41	MISSISSIPPI STATE U	Bobbitt, P. J.	LARC	Thompson, J. F.	NGR 25-001-055	2573
41	MISSISSIPPI STATE U	Hall, A. W.	LARC	Cross, E. J., Jr.	NSG 1083	2574
41	NEW YORK UNIVERSITY	Hicks, R. M.	ARC	Garabedian, P. R.	NGR 33-016-201	2845
41	NEW YORK UNIVERSITY	Fetterman, D. E.	LARC	Ferri, A.	NGL 33-016-119	2838
41	NEW YORK UNIVERSITY	Huber, P. W.	LARC	Ferri, A.	NGR 33-016-131	2839
41	NEW YORK UNIVERSITY	Norum, T. D.	LARC	Ferri, A.	NGR 33-016-177	2841
41	NEW YORK UNIVERSITY	Dunavant, J. C.	LARC	Zakkay, V.	NGR 33-016-179	2842
41	NEW YORK UNIVERSITY	Hefner, J. N.	LARC	Ferri, A.	NSG 1049	2846
41	NO CAROLINA STATE U	Thomson, R. G.	LARC	Chang, T. S.	NGL 34-002-084	2947
41	NO CAROLINA STATE U	Crane, H. L.	LARC	Smetana, F. O.	NSG 1077	2959
41	NO CAROLINA STATE U	Walberg, G. D.	LARC	Dejarnette, F. R.	NSG 1191	2963
41	NORTHWESTERN UNIV	Grobman, J. S.	LERC	Kovitz, A. A.	NGR 14-007-114	1966
41	OHIO STATE UNIV	Card, M. F.	LARC	Bailey, C. D.	NGR 36-008-197	3014
41	OHIO STATE UNIV	Hall, A. W.	LARC	Gregorek, G. M.	NSG 1184	3019
41	OLD DOMINION UNIV	Gentry, G. L., Jr.	LARC	Ousterhout, D. S.	NGR 47-003-039	3512
41	OLD DOMINION UNIV	Anderson, A. F.	LARC	Roberts, A. S., Jr.	NGR 47-003-052	3516
41	OLD DOMINION UNIV	Morgan, H. L., Jr.	LARC	Baker, A. J.	NSG 1038	3527
41	OLD DOMINION UNIV	Walberg, G. D.	LARC	Goglia, G. L.	NSG 1065	3535
41	OLD DOMINION UNIV	Harris, J. E.	LARC	Goglia, G. L.	NSG 1087	3537
41	OLD DOMINION UNIV	Harris, J. E.	LARC	Cooke, C. H.	NSG 1098	3542
41	OLD DOMINION UNIV	Hefner, J. N.	LARC	Ash, R. L.	NSG 1100	3543
41	OLD DOMINION UNIV	Henderson, W. P.	LARC	Goglia, G. L.	NSG 1135	3548
41	OLD DOMINION UNIV	Kershner, D. D.	LARC	Barna, P. S.	NSG 1143	3549
41	OLD DOMINION UNIV	Davis, J. G., Jr.	LARC	Hyer, M. W.	NSG 1167	3553
41	OLD DOMINION UNIV	Harris, J. E.	LERC	Goglia, G. L.	NSG 1094	3541
41	PENNSYLVANIA STATE U	Seiner, J. M.	LARC	Reethof, G.	NGL 39-009-121	3124
41	PENNSYLVANIA STATE U	Heyson, H. H.	LARC	Eisenhuth, J. J.	NGL 39-009-172	3125
41	PENNSYLVANIA STATE U	Heidmann, M. F.	LERC	Lakshminarayana, B.	NAS 3-17855	3110
41	PENNSYLVANIA STATE U	Britsch, W. R.	LERC	Holl, J. W.	NGL 39-009-001	3117
41	PENNSYLVANIA STATE U	Britsch, W. R.	LERC	Lakshminarayana, B.	NGL 39-009-007	3120
41	PENNSYLVANIA STATE U	Stone, J. R.	LERC	Arndt, R. E.	NGR 39-009-270	3131
41	PENNSYLVANIA STATE U	Heidmann, M. F.	LERC	Lakshminarayana, B.	NSG 3012	3136
41	PENNSYLVANIA STATE U	Sanger, N. L.	LERC	Henderson, R. E.	NSG 3031	3138
41	PENNSYLVANIA STATE U	Sockol, P. M.	LERC	Lakshminarayana, B.	NSG 3032	3139
41	POLY INST OF NY	Schmitz, F. H.	ARC	Isom, M. P.	NAS 2-8399	2853
41	POLY INST OF NY	Pinson, L. D.	LARC	Yu, Y. Y.	NSG 1105	2859
41	POLY INST OF NY	Morgan, H. L., Jr.	LARC	Krenkel, A. R.	NSG 1107	2860
41	PRINCETON UNIVERSITY	Franklin, J. A.	ARC	Seckel, E.	NAS 2-7350	2647
41	PRINCETON UNIVERSITY	Morse, H. A.	ARC	Dowell, E. H.	NAS 2-7615	2648
41	PRINCETON UNIVERSITY	Gaspers, P. A., Jr.	ARC	Dowell, E. H.	NGR 31-001-197	2664
41	PRINCETON UNIVERSITY	Cicolani, L. S.	ARC	Dukes, T. A.	NGR 31-001-277	2672
41	PRINCETON UNIVERSITY	Rabbott, J. P., Jr.	ARC	Curtiss, H. C., Jr.	NSG 2045	2681
41	PRINCETON UNIVERSITY	Miller, G. K.	LARC	Socket, E.	NAS 1-13502	2646
41	PRINCETON UNIVERSITY	Hilton, D. A.	LARC	Hayes, W. D.	NGL 31-001-119	2658
41	PRINCETON UNIVERSITY	Mixson, J. S.	LARC	Dowell, E. H.	NGL 31-001-146	2659
41	PRINCETON UNIVERSITY	Reid, H. J., Jr.	LARC	Graham, D.	NGL 31-001-252	2660
41	PRINCETON UNIVERSITY	Crane, H. L.	LARC	Seckel, E.	NSG 1078	2678
41	PRINCETON UNIVERSITY	Chamis, C. C.	LERC	Dowell, E. H.	NGR 31-001-267	2669
41	PRINCETON UNIVERSITY	Stone, J. R.	LERC	Plett, E. G.	NGR 31-001-307	2674
41	PURDUE UNIVERSITY	Zill, L. P.	ARC	Smith, C. R.	NCA 2-05501	2049
41	PURDUE UNIVERSITY	Berry, D. T.	FRC	Swaim, R. L.	NSG 4003	2063
41	PURDUE UNIVERSITY	Landrum, E. J.	LARC	Marshall, F. J.	NGR 15-005-119	2054
41	PURDUE UNIVERSITY	Minner, G. L.	LERC	Vaidya, P. G.	NAS 3-18010	2039
41	PURDUE UNIVERSITY	Davison, H. W.	LERC	Lecuyer, M. R.	NGR 15-005-147	2055

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41	PURDUE UNIVERSITY	Bishop, A. R.	LERC	Hoffman, J. D.	NGR 15-005-162	2058
41	PURDUE UNIVERSITY	Bishop, A. R.	LERC	Hoffman, J. D.	NGR 15-005-191	2061
41	RENSSELAER POLY-NY	Hood, R. V.	LARC	Kaufman, H.	NSG 1188	2875
41	RENSSELAER POLY-NY	Bill, R. C.	LERC	Ling, F. F.	NGR 33-018-152	2872
41	ROSE-HULMAN INST TEC	Ray, E. J.	LARC	Roper, A. T.	NSG 1154	2066
41	ST LOUIS UNIVERSITY	Sobieszczanski, J. E.	LARC	Long, C. A.	NGL 26-006-021	2579
41	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Neptune, J.	NCA 2-75410	1284
41	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Sharfstein, H.	NCA 2-75411	1285
41	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Tucker, A. B.	NCA 2-75413	1286
41	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Myronuk, D. J.	NCA 2-75505	1288
41	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Leonard, T. E.	NCA 2-75513	1293
41	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Miller, A.	NCA 2-75520	1297
41	STHN COLORADO ST COL	Hruby, R. J.	ARC	Jenkins, R. B.	NSG 2048	1691
41	STANFORD UNIVERSITY	Zill, L. P.	ARC	Karamcheti, K.	NCA 2-45512	1334
41	STANFORD UNIVERSITY	Kelley, M. W.	ARC	Bryson, A. R.	NGR 05-020-526	1368
41	STANFORD UNIVERSITY	Park, C.	ARC	Kruger, C. H.	NGR 05-020-583	1370
41	STANFORD UNIVERSITY	Hruby, R. J.	ARC	Bredt, T. A.	NGR 05-020-699	1382
41	STANFORD UNIVERSITY	Kordes, E. E.	FRC	McIntosh, S. C., Jr.	NGL 05-020-498	1356
41	STANFORD UNIVERSITY	Deets, D. A.	FRC	Debra, D. B.	NSG 4002	1398
41	STANFORD UNIVERSITY	Doggett, R. V., Jr.	LARC	Ashley, H.	NGL 05-020-243	1352
41	STANFORD UNIVERSITY	Reed, W. H., III	LARC	Herrmann, G.	NGL 05-020-397	1355
41	STANFORD UNIVERSITY	Parrish, R. V.	LARC	Towell, J. D.	NSG 1137	1387
41	STANFORD UNIVERSITY	Colladay, R. S.	LERC	Kays, W. M.	NAS 3-14336	1311
41	TEXAS A&M UNIVERSITY	Hillje, E. R.	JSC	Cavin, R. K., III	NAS 9-14478	3314
41	TEXAS A&M UNIVERSITY	South, J. C., Jr.	LARC	Carlson, L. A.	NGR 44-001-157	3325
41	TEXAS A&M UNIVERSITY	South, J. C., Jr.	LARC	Carlson, L. A.	NSG 1174	3326
41	TUFTS UNIVERSITY	Zill, L. P.	ARC	Kreifieldt, J. G.	NCA 2-85401	2437
41	TUFTS UNIVERSITY	Zill, L. P.	ARC	Kreifieldt, J. G.	NCA 2-85501	2438
41	TUFTS UNIVERSITY	Zill, L. P.	ARC	Cole, J. E., III	NCA 2-85601	2439
41	TULANE UNIVERSITY	Priem, R. J.	LERC	O'Hara, J. C.	NGR 19-002-030	2183
41	TUSKEGEE INSTITUTE	Guest, S. H.	MSFC	Lenzo, C. S.	NGR 01-005-010	1036
41	UNIV ARKANSAS-FAYETV	Ragent, B.	ARC	Mazumder, M. K.	NGL 04-001-007	1177
41	UNIV ARKANSAS-LTL RK	Zill, L. P.	ARC	Testerman, M. K.	NCA 2-45501	1179
41	UNIV OF BRIDGEPORT	Williams, J. G.	LARC	Palazotto, A. N.	NGR 07-001-004	1743
41	UNIV CALIF-BERKELEY	Zill, L. P.	ARC	Postman, L. J.	NCA 2-50503	1429
41	UNIV CALIF-BERKELEY	Chapman, G. T.	ARC	Holt, M.	NGR 05-003-451	1450
41	UNIV CALIF-BERKELEY	Kenyon, G. C.	ARC	Horonjeff, R.	NSG 2046	1467
41	UNIV CALIF-DAVIS	Zill, L. P.	ARC	White, B. R.	NCA 2-80503	1479
41	UNIV CALIF-L ANGELES	Polentz, P. P.	ARC	Britt, P.	NAS 2-7785	1490
41	UNIV CALIF-L ANGELES	Zill, L. P.	ARC	Schmit, L. A.	NCA 2-90405	1506
41	UNIV CALIF-L ANGELES	Zill, L. P.	ARC	Cole, J. D.	NCA 2-90406	1507
41	UNIV CALIF-L ANGELES	Anderson, A. E.	ARC	Meecham, W. C.	NGR 05-007-323	1529
41	UNIV CALIF-L ANGELES	Orloff, K. L.	ARC	Charwat, A. F.	NSG 2068	1544
41	UNIV CALIF-L ANGELES	Carter, A. L.	FRC	Unavailable	NAS 4-1995	1494
41	UNIV CALIF-L ANGELES	Matranga, G. J.	FRC	Unavailable	NAS 4-2196	1495
41	UNIV CALIF-L ANGELES	Rediess, H. A.	FRC	Balakrishnan, A. V.	NGL 05-007-379	1521
41	UNIV CALIF-L ANGELES	Stroud, W. J.	LARC	Schmit, L. A.	NGR 05-007-337	1532
41	UNIV CALIF-L ANGELES	Bland, S. R.	LARC	Cole, J. D.	NGR 05-007-395	1535
41	UNIV CALIF-L ANGELES	Hammond, C. E.	LARC	Friedmann, P. P.	NGR 05-007-414	1537
41	UNIV CALIF-SAN DIEGO	Gessow, A.	LARC	Libby, P. A.	NGR 05-009-178	1580
41	UNIV OF CINCINNATI	Burke, J. A.	ARC	Tabakoff, W.	NAS 2-7850	3026
41	UNIV OF CINCINNATI	Queijo, M. J.	LARC	Wells, W. R.	NGR 36-004-061	3030
41	UNIV OF CINCINNATI	Harris, J. E.	LARC	Davis, R. T.	NGR 36-004-069	3034
41	UNIV OF CINCINNATI	Dunavant, J. C.	LARC	Polak, A.	NSG 1208	3037
41	UNIV OF CINCINNATI	Prust, H. W., Jr.	LERC	Tabakoff, W.	NGR 36-004-064	3031
41	UNIV OF CINCINNATI	Jones, R. E.	LERC	Kauffman, C. W.	NSG 3045	3040
41	UNIV OF CINCINNATI	Glassman, A. J.	LERC	Tabakoff, W.	NSG 3066	3041
41	UNIV COLORADO-BOLDR	Rainey, R. W.	LARC	Culp, R. D.	NSG 1056	1723

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41	UNIV COLORADO-BOLDR	Deissler, R. G.	LERC	Uberoi, M. S.	NGR 06-003-208	1715
41	UNIV OF DAYTON	Camp, D. W.	MSFC	Leurs, J. K.	NAS 8-31294	3044
41	UNIV OF FLORIDA	Zill, L. P.	ARC	Clarkson, M. H.	NCA 2-40501	1847
41	UNIV OF FLORIDA	Wolverton, B. C.	NSTL	Sekhon, B. S.	NGL 10-005-127	1853
41	UNIV OF HOUSTON	Zill, L. P.	ARC	Kiehn, R. M.	NCA 2-95502	3350
41	UNIV OF HOUSTON	Fischer, M. C.	LARC	Hussain, A. F.	NSG 1103	3364
41	UNIV ILLINOIS-CHICGO	Evans, J. S.	LARC	Chung, P. M.	NSG 1150	2003
41	UNIV ILLINOIS-URBANA	Morgan, H. L., Jr.	LARC	Ormsbee, A. I.	NGR 14-005-144	2008
41	UNIV ILLINOIS-URBANA	Stickle, J. W.	LARC	Ormsbee, A. I.	NGR 14-005-194	2015
41	UNIV ILLINOIS-URBANA	Bober, L. J.	LERC	Chow, W. L.	NGL 14-005-140	2007
41	UNIV ILLINOIS-URBANA	Karchmer, A. M.	LERC	Jones, B. G.	NGR 14-005-149	2009
41	UNIV ILLINOIS-URBANA	Karchmer, A. M.	LERC	Jones, B. G.	NGR 14-005-177	2011
41	UNIV ILLINOIS-URBANA	Marek, C. J.	LERC	Strehlow, R. A.	NGR 14-005-193	2014
41	UNIV OF KANSAS	Zill, L. P.	ARC	Roskam, J.	NSG 4007	2132
41	UNIV OF KANSAS	Gee, S. W.	FRC	Roskam, J.	NAS 4-2148	2109
41	UNIV OF KANSAS	Fields, R. A.	FRC	Lenzen, K. H.	NSG 4006	2131
41	UNIV OF KANSAS	Ward, J. F.	LARC	Muirhead, V. U.	NAS 1-12976	2107
41	UNIV OF KANSAS	Crane, H. L.	LARC	Kohlman, D. L.	NGR 17-002-072	2122
41	UNIV OF KANSAS	Pride, R. A.	LARC	Lenzen, K. H.	NGR 17-004-027	2124
41	UNIV OF KANSAS	Lamar, J. E.	LARC	Roskam, J.	NSG 1046	2125
41	UNIV OF KANSAS	Naumann, E. C.	LARC	Lenzen, K. H.	NSG 1122	2126
41	UNIV OF KANSAS	Campbell, J. F.	LARC	Lan, C. E.	NSG 1139	2127
41	UNIV OF KANSAS	Hall, A. W.	LARC	Roskam, J.	NSG 1175	2129
41	UNIV MARYLAND-COL PK	Chyu, W. J.	ARC	Yang, J. C.	NGR 21-002-350	2253
41	UNIV MARYLAND-COL PK	McComb, H. G., Jr.	LARC	Schaeffer, H. G.	NSG 1193	2272
41	UNIV MD-EASTRN SHORE	Raine, A. W.	WFC	Nagarajon, N.	NGR 21-119-002	2287
41	UNIV MICH-ANN ARBOR	Feistel, T. W.	ARC	Kroeger, R. A.	NSG 2018	2505
41	UNIV MICH-ANN ARBOR	Galloway, T. L.	ARC	Kroeger, R. A.	NSG 2056	2506
41	UNIV MICH-ANN ARBOR	McCarty, J. L.	LARC	Clark, S. R.	NGL 23-005-010	2482
41	UNIV MICH-ANN ARBOR	Czarnecki, K. R.	LARC	Sichel, M.	NGR 23-005-523	2491
41	UNIV MICH-ANN ARBOR	McCarty, J. L.	LARC	Clark, S. K.	NSG 1080	2503
41	UNIV MISS-UNIVERSITY	Gutierrez, O. A.	LERC	Shields, F. D.	NAS 3-19431	2576
41	UNIV MO-ROLLA	Mixson, J. S.	LARC	Koval, L. R.	NSG 1050	2595
41	UNIV OF NOTRE DAME	Feiler, C. E.	LERC	Atassi, H.	NSG 3037	2069
41	UNIV OKLAHOMA-NORMAN	Stephens, J. B.	MSFC	Canfield, J. M.	NAS 8-30175	3066
41	UNIV OF PENNSYLVANIA	Taylor, R. E.	GSFC	Showers, R. M.	NAS 5-20707	3143
41	UNIV OF SANTA CLARA	Zill, L. P.	ARC	Markle, G. E.	NCA 2-85409	1625
41	UNIV OF SANTA CLARA	Zill, L. P.	ARC	Pefley, R. K.	NCA 2-85505	1629
41	UNIV OF SANTA CLARA	Hruby, R. J.	ARC	Dunn, W. R.	NGR 05-017-031	1636
41	UNIV OF SANTA CLARA	Muhlstein, L., Jr.	ARC	Cheng, D. Y.	NGR 05-017-033	1637
41	UNIV OF SOUTHERN CAL	Zill, L. P.	ARC	Cheng, H. K.	NCA 2-30501	1651
41	UNIV OF SOUTHERN CAL	Dorsch, R. G.	LERC	Laufer, J.	NAS 3-17857	1644
41	UNIV OF SOUTHERN CAL	Olsen, W. A.	LERC	Laufer, J.	NSG 3025	1657
41	UNIV TENNESSEE-KNOXV	Hammond, C. E.	LARC	Lumsdaine, E.	NSG 1054	3225
41	UNIV TENNESSEE-KNOXV	Chestnutt, D.	LARC	Lumsdaine, E.	NSG 1081	3226
41	UNIV TENNESSEE-KNOXV	Hammond, C. E.	LARC	Lumsdaine, E.	NSG 1171	3228
41	UNIV TENNESSEE-KNOXV	Dittmar, J. H.	LERC	Lumsdaine, E.	NGR 43-001-134	3222
41	UNIV TENNESSEE-KNOXV	Reshotko, M.	LERC	Maus, J. R.	NGR 43-001-135	3223
41	UNIV TEXAS-ARLINGTON	Rubesin, M. W.	ARC	Payne, F. R.	NSG 2077	3365
41	UNIV TEXAS-AUSTIN	Coe, C. F.	ARC	Panton, R. L.	NGR 44-012-221	3389
41	UNIV TEXAS-AUSTIN	Goodrich, W. D.	JSC	Bertin, J. J.	NAS 9-13680	3375
41	UNIV TEXAS-AUSTIN	Key, J. E.	MSFC	Becker, E. B.	NAS 8-30622	3370
41	UNIV OF TORONTO	Foye, R. L.	LARC	Tennyson, R. C.	NGR 52-026-039	3720
41	UNIV OF VIRGINIA	Yates, E. C., Jr.	LARC	Haviland, J. K.	NGL 47-005-098	3569
41	UNIV OF VIRGINIA	Schoonover, W. E., Jr.	LARC	Kuhlthau, A. R.	NGR 47-005-181	3573
41	UNIV OF VIRGINIA	Lichtenstein, J. H.	LARC	Jacobson, I. D.	NGR 47-005-208	3577
41	UNIV OF VIRGINIA	Schoenster, J. A.	LARC	Haviland, J. K.	NGR 47-005-219	3579
41	UNIV OF VIRGINIA	Kilgore, R. A.	LARC	Zapata, R. N.	NSG 1010	3580

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41	UNIV OF VIRGINIA	Leatherwood, J. D.	LARC	Jacobson, I. D.	NSG 1180	3585
41	UNIV OF WASHINGTON	Zill, L. P.	ARC	Businger, J. A.	NCA 2-50501	3637
41	UNIV OF WASHINGTON	Watson, E. C.	ARC	Childs, M. E.	NGL 48-002-047	3642
41	UNIV OF WASHINGTON	Steinle, F. W., Jr.	ARC	Russell, D. A.	NGR 48-002-107	3645
41	UNIV OF WASHINGTON	Watson, E. C.	ARC	Kippenhan, C. J.	NGR 48-002-141	3648
41	UNIV OF WASHINGTON	Heyson, H. H.	LARC	Joppa, R. G.	NGL 48-002-010	3639
41	UNIV OF WASHINGTON	Heyson, H. H.	LARC	Rae, W. H.	NGL 48-002-035	3640
41	UNIV WISC-MILWAUKEE	Young, W. H., Jr.	LARC	Bratanow, T.	NGR 50-007-001	3705
41	VA MILITARY INSTITUT	Creedon, J. F.	LARC	Reid, G. F.	NGR 47-018-005	3589
41	VIRGINIA POLY INST	Gaspers, P. A., Jr.	ARC	Weisshaar, T. A.	NSG 2016	3625
41	VIRGINIA POLY INST	Curry, D. M.	JSC	Lewis, C. H.	NAS 9-12630	3597
41	VIRGINIA POLY INST	Anderson, A. F.	LARC	Fabrycky, W. J.	NGR 47-004-090	3600
41	VIRGINIA POLY INST	Beckwith, I. E.	LARC	Schetz, J. A.	NGR 47-004-106	3604
41	VIRGINIA POLY INST	Montgomery, R. C.	LARC	Caglayan, A. K.	NGR 47-004-116	3607
41	VIRGINIA POLY INST	Montgomery, R. C.	LARC	Cliff, E. M.	NSG 1015	3610
41	VIRGINIA POLY INST	Newman, J. C., Jr.	LARC	Smith, C. W.	NSG 1024	3612
41	VIRGINIA POLY INST	Davidson, J. R.	LARC	Heller, R. A.	NSG 1099	3616
41	VIRGINIA POLY INST	Kvaternik, R. G.	LARC	Meirovitch, L.	NSG 1114	3618
41	VIRGINIA STATE COL	Lester, H. C.	LARC	Agrawal, K. M.	NGL 47-014-009	3628
41	WASHINGTON UNIVERSTY	Morse, H. A.	ARC	Hohenemser, K. H.	NAS 2-7613	2597
41	WICHITA STATE UNIV	Noonan, K. W.	LARC	Wentz, W. H., Jr.	NGR 17-003-021	2134
41	WICHITA STATE UNIV	Crane, H. L.	LARC	Wentz, W. H., Jr.	NSG 1118	2135
41	WICHITA STATE UNIV	McGhee, R. J.	LARC	Wentz, W. H., Jr.	NSG 1165	2136
41	WICHITA STATE UNIV	Bowman, J. S., Jr.	LARC	Craig, A. J.	NSG 1189	2137
41	WICHITA STATE UNIV	Morgan, H. L., Jr.	LARC	Zumwalt, G. W.	NSG 1192	2138
42	CAL STATE U-SACRAMEN	Priem, R. J.	LERC	Reardon, F. H.	NGR 05-058-003	1259
42	COLORADO STATE UNIV	Priem, R. J.	LERC	Mitchell, C. E.	NGR 06-002-095	1675
42	COLORADO STATE UNIV	Serafini, J. S.	LERC	Wilhelm, H. E.	NGR 06-002-147	1681
42	COLORADO STATE UNIV	Mirtich, M. J.	LERC	Kaufman, H. R.	NSG 3011	1687
42	GEORGIA INST OF TECH	Priem, R. J.	LERC	Zinn, B. T.	NGR 11-002-179	1909
42	GEORGIA INST OF TECH	Priem, R. J.	LERC	Zinn, B. T.	NSG 3052	1919
42	MASS INST OF TECH	Hovnanian	HQ-SS	Biemann, K.	NGR 22-009-102	2373
42	PENNSYLVANIA STATE U	Priem, R. J.	LERC	Faeth, G. M.	NGR 39-009-077	3127
42	PENNSYLVANIA STATE U	Cramblitt, D.	HQ-MT	Kaplan, M.	NSG 7078	3140
42	POLY INST OF NY	Hoppe, J. C.	LARC	Lederman, S.	NSG 1198	2861
42	PRINCETON UNIVERSITY	Barbieri, R. W.	GSFC	Lion, P. M.	NGR 31-001-152	2663
42	PRINCETON UNIVERSITY	Lazar, J.	HQ-RP	Jahn, R. G.	NGL 31-001-005	2656
42	PRINCETON UNIVERSITY	Tarver, P.	HQ-SL	Layton, J. P.	NSR 31-001-313	2690
42	STANFORD UNIVERSITY	Zill, L. P.	ARC	Croft, T. A.	NCA 2-45510	1332
42	STANFORD UNIVERSITY	Lidston, J. M.	GSFC	Debra, D. B.	NAS 5-21960	1316
42	UNIV ALA-HUNTSVILLE	Swenson, G. R.	MSFC	Hermann, R.	NAS 8-28248	1045
42	UNIV OF ARIZONA	Aucremanne, M. J.	HQ-SG	Meinel, A. B.	NASW 2283	1121
42	UNIV OF HOUSTON	Eggleston, J. M.	JSC	Michalopoulos, C. D.	NAS 9-14347	3341
42	UNIV OF HOUSTON	Jackson, J. T.	JSC	Sheer, D. E.	NAS 9-14532	3344
42	UNIV OF KANSAS	Seiff, A.	ARC	Muirhead, V. V.	NAS 2-8556	2108
42	UNIV OF LOUISVILLE	Gross, L. A.	MSFC	Childs, D. A.	NAS 8-31233	2152
42	UNIV MICH-ANN ARBOR	Wright, D. U.	LERC	Ferris, J.	NAS 3-19533	2462
42	UNIV MICH-ANN ARBOR	Haggard, J. B., Jr.	LERC	Nicholls, J. A.	NGR 23-005-536	2493
42	UNIV TENNESSEE-KNOXV	Hady, W. F.	LERC	Milligan, M. W.	NGR 43-001-127	3221
42	UNIV TENNESSEE-KNOXV	Berry, E. H.	MSFC	Kennedy, E. J.	NAS 8-27296	3211
42	UNIV OF UTAH	Sewall, J. L.	LARC	Hufferd, W. L.	NSG 1113	3465
42	VIRGINIA POLY INST	Fedor, J. V.	GSFC	Meirovitch, L.	NGR 47-004-098	3602
43	AUBURN UNIV-AUBURN	Shackelford, B. W.	MSFC	Sforzini, R. H.	NCA 8-108	1026
43	FLORIDA INST OF TECH	Franks, H. H.	KSC	Bowman, T. E.	NAS10-8399	1832
43	GRAMBLING STATE UNIV	Pohly, J. G.	HQ-P	Sabu, D. D.	NGR 19-011-012	2159
43	MASS INST OF TECH	Mularz, E. J.	LERC	Heywood, J. B.	NGR 22-009-378	2377
43	PRAIRIE VIEW A&M U	Pohly, J. G.	HQ-P	Stubblefield, C. T.	NGR 44-033-014	3265
43	RICE UNIVERSITY	Kissinger, L. D.	JSC	Davis, S. H.	NAS 9-11827	3275

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43	STATE U NY-STONY BRK	Cochran, T. H.	LERC	Berlad, A. L.	NSG 3051	2910
43	TEXAS SOUTHERN UNIV	Shields, V.	JSC	Wilson, R. F.	NSG 9029	3328
43	UNIV CALIF-BERKELEY	Wydeven, T. J.	ARC	Bell, A. T.	NSG 2043	1466
43	UNIV CALIF-SAN DIEGO	Cochran, T. H.	LERC	Williams, F. A.	NSG 3047	1594
43	UNIV OF FLORIDA	Post, R. E.	LERC	Walker, R. D., Jr.	NGL 10-005-022	1849
43	UNIV OF FLORIDA	Soltis, D. G.	LERC	Walker, R. D., Jr.	NGR 10-005-182	1857
43	UNIV ILLINOIS-URBANA	Cochran, T. H.	LERC	Strehlow, R. A.	NSG 3043	2021
43	UNIV MO-COLUMBIA	Ellis, W. E.	JSC	Winnick, J.	NAS 9-12526	2586
43	UNIV OF SO CAROLINA	Jorolan, A. E.	KSC	Bonnell, R. D.	NAS10-8354	3189
44	CAL STATE U-SACRAMEN	Zill, L. P.	ARC	Happ, W. H.	NCA 2-55501	1257
44	COLORADO STATE UNIV	Cliff, W. C.	MSFC	Cermak, J. E.	NAS 8-29583	1666
44	DUKE UNIVERSITY	Snyder, W. J.	LARC	Dajani, J. S.	NSG 1121	2936
44	HOWARD UNIVERSITY	Kruszewski, E. T.	LARC	Broome, T. H.	NSG 1130	1819
44	OLD DOMINION UNIV	Leland, T. J.	LARC	Cheng, R.	NGL 47-003-012	3511
44	OLD DOMINION UNIV	Weidman, D. J.	LARC	Narayanaswami, R.	NSG 1117	3545
44	UNIV ALA-HUNTSVILLE	Morton, R. R.	MSFC	Grohse, E. W.	NAS 8-31169	1062
44	UNIV CALIF-BERKELEY	Kourtides, D. A.	ARC	Williamson, R. B.	NSG 2026	1465
44	VIRGINIA POLY INST	Hayduk, R. J.	LARC	Kamat, M. P.	NGR 47-004-114	3606
44	VIRGINIA POLY INST	Kruszewski, E. T.	LARC	Meirovitch, L.	NSG 1109	3617
45	ALABAMA A&M UNIV	Lowrey, D. O.	MSFC	Weathers, G.	NSG 8013	1008
45	AMERICAN UNIVERSITY	Long, E. R., Jr.	LARC	Cullen, E.	NGR 09-003-014	1769
45	AUBURN UNIV-AUBURN	Emens, F. H.	MSFC	Irwin, J. D.	NAS 8-20765	1014
45	AUBURN UNIV-AUBURN	Lowrey, D. O.	MSFC	Honnell, M. A.	NAS 8-26193	1015
45	AUBURN UNIV-AUBURN	White, J. B.	MSFC	Carroll, B. D.	NAS 8-26930	1017
45	AUBURN UNIV-AUBURN	Gould, J. M.	MSFC	Carroll, B. D.	NAS 8-31190	1023
45	AUBURN UNIV-AUBURN	Keer, J. H.	MSFC	Pinson, L. J.	NAS 8-31223	1024
45	CITY COLLEGE OF N Y	Brown, J. P.	GSFC	Schilling, D. L.	NGR 33-013-077	2748
45	CITY COLLEGE OF N Y	Miller, J. E.	GSFC	Schilling, D. L.	NSG 5013	2751
45	CITY COLLEGE OF N Y	Batson, B. H.	JSC	Schilling, D. L.	NAS 9-13940	2744
45	COLORADO STATE UNIV	Rositano, S. A.	ARC	Histand, M. B.	NSG 2009	1686
45	COLORADO STATE UNIV	Berge, L. H.	MSFC	Jones, T. B.	NAS 8-30250	1667
45	COLUMBIA UNIVERSITY	Lalli, V. R.	LERC	Stern, T.	NGL 33-008-090	2765
45	DUKE UNIVERSITY	Rodriguez, G. E.	GSFC	Wilson, T. G.	NAS 5-22475	2932
45	DUKE UNIVERSITY	Rodriguez, G. E.	GSFC	Wilson, T. J.	NGL 34-001-001	2933
45	DUKE UNIVERSITY	Cote, C. E.	GSFC	Wang, P. P.	NSG 5020	2937
45	GEORGE WASHINGTON U	Swift, C. T.	LARC	Liebowitz, H.	NGR 09-010-096	1798
45	GEORGE WASHINGTON U	Bailey, M. C.	LARC	Liebowitz, H.	NSG 1110	1800
45	GEORGIA INST OF TECH	O'Donnell, H.	GSFC	Rayan, C. E.	NAS 5-22344	1887
45	GEORGIA INST OF TECH	Dod, L. R.	GSFC	Jenkins, H. H.	NAS 5-22422	1888
45	GEORGIA INST OF TECH	King, J. L.	GSFC	Dees, J. W.	NSG 5012	1920
45	GEORGIA INST OF TECH	Wright, M. I.	KSC	Webb, R. P.	NAS10-8375	1901
45	GEORGIA INST OF TECH	Conroy, M. J.	LERC	Bassett, H. L.	NAS 3-18901	1884
45	GEORGIA INST OF TECH	Kerr, J. H.	MSFC	Callor, W. R.	NAS 8-28591	1889
45	GEORGIA INST OF TECH	Kerr, J. H.	MSFC	Hart, R. K.	NAS 8-29860	1892
45	HAMPTON INSTITUTE	Katzberg, S. J.	LARC	Trehan, A. K.	NSG 1146	3499
45	HARVARD UNIVERSITY	Lalli, V. R.	LERC	Brockett, R. W.	NGR 22-007-172	2312
45	HOFSTRA UNIVERSITY	Swift, C. T.	LARC	Weissman, D. E.	NGR 33-209-002	2828
45	HOWARD UNIVERSITY	Savely, R. T.	JSC	Choudhury, A. K.	NSG 9010	1823
45	KANSAS STATE UNIV	Zill, L. P.	ARC	Ahmed, N.	NCA 2-63501	2104
45	LAVAL UNIVERSITY	Major, F. G.	GSFC	Vanier, J.	NGR 52-133-001	3718
45	MASS INST OF TECH	Freibaum, J.	HQ-EC	Unavailable	NASW 2787	2356
45	MASS INST OF TECH	Catoe, C. E.	HQ-RE	Kennedy, R. S.	NGL 22-009-013	2358
45	MEMPHIS ST UNIV	Shack, P. E.	JSC	Morris, C. F.	NAS 9-13878	3200
45	MISSISSIPPI STATE U	Pitts, E. H.	MSFC	Rogers, T. W.	NAS 8-30618	2564
45	MISSISSIPPI STATE U	Keer, J. H.	MSFC	Ingels, F. M.	NAS 8-31373	2566
45	NEW MEX ST U-LAS CR	Schlimmer, G. E.	KSC	Bumgarner, R. A.	NAS10-7399	2705
45	NO CAR A&T STATE U	Pohly, J. G.	HQ-P	Madan, R. N.	NGR 34-012-003	2939
45	NO CAROLINA STATE U	Lassiter, W. S.	LARC	Monteith, L. K.	NAS 1-12833	2944

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45	NO CAROLINA STATE U	Croswell, W. F.	LARC	Herman, B. M.	NGR 34-002-188	2953
45	NO CAROLINA STATE U	Hutchby, J. A.	LARC	Hauser, J. R.	NSG 1116	2960
45	NO CAROLINA STATE U	Godlewski, M. P.	LERC	Hempfling, W. P.	NGR 34-002-195	2954
45	OHIO STATE UNIV	Hirschmann, E.	GSFC	Ksienski, A. A.	NGR 36-008-080	3012
45	OHIO STATE UNIV	Gilreath, M. C.	LARC	Burnside, W. D.	NGL 36-008-138	3011
45	OHIO STATE UNIV	Cooper, D. W.	LERC	Peake, W. H.	NSG 3005	3021
45	OHIO UNIVERSITY	Mace, W. D.	LARC	McFarland, R. H.	NGR 36-009-017	3024
45	OLD DOMINION UNIV	Tripp, J. S.	LARC	Tcheng, P. L.	NSG 1079	3536
45	OLD DOMINION UNIV	Hellbaum, R. F.	LARC	Goglia, G. L.	NSG 1177	3555
45	PURDUE UNIVERSITY	Lynch, T. J.	GSFC	Wintz, P. A.	NGR 15-005-152	2056
45	RENSSELAER POLY-NY	Grant, T. L.	ARC	Modestino, J. W.	NGR 33-018-188	2873
45	SAN FRAN STATE UNIV	Zill, L. P.	ARC	Catalano, G. T.	NCA 2-60411	1273
45	SOUTHEASTN MASS UNIV	Kutz, R. L.	GSFC	Chen, C. H.	NGR 22-031-002	2436
45	SOUTHERN METHODIST U	Bracalente, E. M.	LARC	Gupta, S. C.	NGR 44-007-049	3291
45	SOUTHERN METHODIST U	Walker, G. H.	LARC	Ashley, K. L.	NSG 1206	3292
45	SO UNIV-BATON ROUGE	Echelkamp, R. E.	JSC	Grewal, G. S.	NSG 9030	2177
45	STANFORD UNIVERSITY	Zill, L. P.	ARC	Dutton, R. M.	NCA 2-45425	1322
45	STANFORD UNIVERSITY	Zill, L. P.	ARC	Peterson, A. M.	NCA 2-45513	1335
45	STANFORD UNIVERSITY	Zill, L. P.	ARC	Powell, J. D.	NCA 2-45518	1340
45	STANFORD UNIVERSITY	Grant, T. L.	ARC	Croft, T. A.	NSG 2017	1391
45	STANFORD UNIVERSITY	Baker, J.	GSFC	Villard, O. G.	NAS 5-10102	1312
45	STANFORD UNIVERSITY	Williams, T. S., Jr.	LARC	Tyler, G. L.	NAS 1-9701	1307
45	STANFORD UNIVERSITY	Catoe, C. E.	HQ-RE	Harris, S. E.	NGL 05-020-103	1347
45	SYRACUSE UNIVERSITY	Stermer, R. L.	LARC	Schroder, K.	NSG 1194	2920
45	TENNESSEE TECH U	Humphries, W. R.	MSFC	Griggs, E. I.	NCA 8-102	3207
45	TEXAS A&M UNIVERSITY	Nowakowski, M. F.	MSFC	Porter, W. A.	NAS 8-26379	3301
45	TEXAS TECH UNIV	Day, J. L.	JSC	Portnoy, W. M.	NAS 9-11162	3329
45	TUSKEGEE INSTITUTE	Crowell, C. S.	MSFC	Doreswamy, C. V.	NSG 8003	1038
45	UNIV OF ARIZONA	Zill, L. P.	ARC	Call, R. L.	NCA 2-40502	1124
45	UNIV OF ARIZONA	Zill, L. P.	ARC	Williams, P. L.	NCA 2-40503	1125
45	UNIV OF ARIZONA	Schwenk, F. C.	HQ-NS	Schultz, D. G.	NGL 03-002-006	1133
45	UNIV CALIF-BERKELEY	Zill, L. P.	ARC	Angelakos, D.	NCA 2-50406	1426
45	UNIV CALIF-BERKELEY	Billman, K. W.	ARC	Gustafson, T. K.	NGR 05-003-559	1460
45	UNIV OF CINCINNATI	Sundberg, G. R.	LERC	Henderson, H. T.	NSG 3022	3038
45	UNIV OF CINCINNATI	Grier, N. T.	LERC	Nevin, J. H.	NSG 3024	3039
45	UNIV COLORADO-BOLDR	Jones, R. L.	LARC	Horowitz, I.	NSG 1140	1724
45	UNIV COLORADO-BOLDR	Schy, A. A.	LARC	Wang, S. H.	NSG 1213	1725
45	UNIV OF FLORIDA	Peake, H. J.	GSFC	Bailey, R. L.	NSG 5061	1862
45	UNIV OF FLORIDA	Godlewski, M. P.	LERC	Lindholm, F. A.	NSG 3018	1860
45	UNIV OF KANSAS	Bailey, M. C.	LARC	Biggs, A. W.	NSG 1142	2128
45	UNIV MARYLAND-COL PK	Hurt, C. R.	GSFC	Hochuli, U. E.	NGR 21-002-345	2252
45	UNIV MARYLAND-COL PK	Levine, D. M.	GSFC	Harger, R. O.	NSG 5048	2279
45	UNIV OF MASS-AMHERST	Rolinski, A. J.	GSFC	Monopoli, R. V.	NGL 22-010-018	2443
45	UNIV MICH-ANN ARBOR	Ross, R. W.	GSFC	Ponnampereuma, C. A.	NAS 5-23267	2475
45	UNIV MO-COLUMBIA	Poland, W. B., Jr.	GSFC	Noack, T. L.	NAS 5-20826	2584
45	UNIV OF NOTRE DAME	Lynch, T. J.	GSFC	Massey, J. L.	NGL 15-004-026	2067
45	UNIV OF NOTRE DAME	Lynch, T. J.	GSFC	Massey, J. L.	NSG 5025	2072
45	UNIV OF NOTRE DAME	Hendricks, H. D.	LARC	Magee, C. J.	NSG 1102	2068
45	UNIV OF NOTRE DAME	Lehtinen, B.	LERC	Leake, R. J.	NSG 3048	2070
45	UNIV OKLAHOMA-NORMAN	Gross, C.	LARC	Kahng, S. K.	NSG 1183	3070
45	UNIV OF PENNSYLVANIA	Durrani, S. H.	GSFC	Berkowitz, R. S.	NSG 5064	3146
45	UNIV OF SO CAROLINA	Lowrey, D. O.	MSFC	Fellers, R. G.	NAS 8-28660	3188
45	UNIV OF SO CAROLINA	Carvso, S. V.	MSFC	Sergent, J.	NAS 8-31172	1873
45	UNIV OF SOUTHERN CAL	Kutz, R. L.	GSFC	Davisson, L. D.	NAS 5-21505	1645
45	UNIV OF SOUTHERN CAL	Kutz, R. L.	GSFC	Davisson, L. D.	NGL 05-018-118	1652
45	UNIV TENNESSEE-KNOXV	Borelli, M. T.	MSFC	Gonzalez, R. C.	NAS 8-29271	3212
45	UNIV TENNESSEE-KNOXV	Fisher, P. H., Jr.	MSFC	Liu, T. C.	NAS 8-30256	3214
45	UNIV TEXAS-AUSTIN	Hirschmann, E.	GSFC	Straiton, A. W.	NAS 5-21982	3367

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45	UNIV OF TOLEDO	Lehtinen, B.	LERC	Leininger, G. G.	NSG 3063	3049
45	UNIV OF UTAH	Coler, C. R.	ARC	Plummer, R. P.	NGR 45-003-108	3464
45	UNIV OF VIRGINIA	Kelly, W. L.	LARC	White, E. J.	NAS 1-10210	3561
45	UNIV OF VIRGINIA	Wells, J. G., Jr.	LARC	Parrish, E. A., Jr.	NSG 1067	3581
45	UNIV OF VIRGINIA	Shultz, L. R.	LARC	McAlpine, G. A.	NSG 1128	3583
45	VIRGINIA POLY INST	Hirschmann, E.	GSFC	Bostian, C. W.	NAS 5-21984	3594
45	VIRGINIA POLY INST	Hirschmann, E.	GSFC	Bostian, C. W.	NGR 47-004-091	3601
45	VIRGINIA POLY INST	Cuddihy, D. G.	LARC	Bennett, W. E., III	NSG 1132	3621
45	WASHINGTON TECH INST	Ehrmann, C. H.	GSFC	Boyd, P.	NAS 5-22383	1824
45	WASHINGTON TECH INST	Ehrmann, C. H.	GSFC	Brach, P.	NGR 09-059-002	1826
45	WAYNE STATE UNIV	Brandhorst, H. W., Jr.	LERC	Wang, E. Y.	NGR 23-006-057	2514
45	WAYNE STATE UNIV	Dunning, J. W., Jr.	LERC	Wang, E. Y.	NGR 23-006-063	2515
45	WAYNE STATE UNIV	Dunning, J. W., Jr.	LERC	Yu, F. T.	NSG 3035	2518
45	WEST VIRGINIA UNIV	Johnson, J. W.	LARC	Balanis, C. A.	NGR 49-001-056	3662
45	YALE UNIVERSITY	Schaefer, D. H.	GSFC	Barker, R. C.	NGL 07-004-005	1750
46	ALABAMA A&M UNIV	Pohly, J. G.	HQ-P	Weathers, G. D.	NGR 01-001-021	1002
46	BROWN UNIVERSITY	Misencik, J. A.	LERC	Mylonas, C.	NGL 40-002-080	3171
46	CALIF INST OF TECH	Gross, L. A.	MSFC	Acosta, A. J.	NAS 8-29313	1195
46	CAL STATE U-NRTHRDGE	Coe, H. H.	LERC	Nypan, L. J.	NGR 05-062-002	1255
46	CAL STATE U-NRTHRDGE	Coe, H. H.	LERC	Nypan, L. J.	NSG 3065	1256
46	CARNEGIE-MELLON UNIV	Srawley, J. E.	LERC	Swedlow, J. L.	NGR 39-087-053	3092
46	CARNEGIE-MELLON UNIV	Ludwig, L. P.	LERC	Hughes, W. F.	NSG 3023	3093
46	CLEMSON UNIV-CLEMSON	Reveley, W. F.	JSC	Gaddis, J. L.	NAS 9-13669	3181
46	CLEMSON UNIV-CLEMSON	Poe, C. C., Jr.	LARC	Goree, J. G.	NSG 1104	3185
46	CLEVELAND STATE UNIV	Townsend, D. P.	LERC	Kasuba, R.	NAS 3-18547	2997
46	COLORADO STATE UNIV	Debs, R. J.	ARC	Loehrke, R. I.	NGR 06-002-127	1679
46	COLORADO STATE UNIV	Misencik, J. A.	LERC	Smith, F. W.	NGL 06-002-063	1673
46	COLORADO STATE UNIV	Kerslake, W. R.	LERC	Wilbur, P. J.	NGR 06-002-112	1678
46	COLORADO STATE UNIV	Cliff, W. C.	MSFC	Winn, C. B.	NAS 8-31237	1668
46	GEORGIA INST OF TECH	Kirkpatrick, J. P.	ARC	Colwell, G. T.	NSG 2054	1916
46	GEORGIA INST OF TECH	Jones, W. R., Jr.	LERC	Winer, W. O.	NGR 11-002-133	1905
46	HOWARD UNIVERSITY	Huff, V. N.	HQ-MT	Bainum, P. M.	NGR 09-011-053	1813
46	MASS INST OF TECH	Borelli, M. T.	MSFC	Whitney, D. E.	NAS 8-28055	2344
46	MASS INST OF TECH	Miller, D. J.	HQ-NS	Sheridan, T. B.	NGR 22-009-658	2386
46	MEMPHIS ST UNIV	Patterson, W. C.	MSFC	Perry, E.	NAS 8-31189	3199
46	MISSISSIPPI STATE U	Fleming, D. P.	LERC	Stiffler, A. K.	NGR 25-001-050	2572
46	NORTHWESTERN UNIV	Zaretsky, E. V.	LERC	Cheng, H.	NGR 14-007-084	1965
46	NORTHWESTERN UNIV	Zaretsky, E. V.	LERC	Cheng, H. S.	NSG 3042	1971
46	OLD DOMINION UNIV	French, B. O.	JSC	Keshock, E. G.	NAS 9-13410	3509
46	PENNSYLVANIA STATE U	Posey, J. W.	LARC	Reethof, G.	NSG 1126	3134
46	PENNSYLVANIA STATE U	Dittmar, J. H.	LERC	Henderson, R. E.	NGR 39-009-275	3132
46	PURDUE UNIVERSITY	Minner, G. L.	LERC	Vaidya, P. G.	NSG 3029	2062
46	ROCHESTER INST TECH	Anderson, W. J.	LERC	Rieger, N. F.	NSG 3072	2879
46	SO UNIV-BATON ROUGE	Williamson, J. G.	MSFC	Tabony, J.	NSG 8025	2175
46	STANFORD UNIVERSITY	Zill, L. P.	ARC	Debra, D. B.	NCA 2-45601	1343
46	STANFORD UNIVERSITY	Goldstein, H. E.	ARC	Bates, C. W.	NGR 05-020-710	1383
46	STANFORD UNIVERSITY	Graham, R. W.	LERC	Kays, W. M.	NGL 05-020-134	1348
46	TENNESSEE STATE UNIV	Harman, H. S.	MSFC	Packman, P. F.	NSG 8012	3205
46	TENNESSEE TECH U	Priem, R. J.	LERC	Purdy, K. R.	NGR 43-003-015	3209
46	TUSKEGEE INSTITUTE	French, B. O.	JSC	Sellers, J. P.	NAS 9-13844	1035
46	UNIV ALA-HUNTSVILLE	Allums, S. L.	MSFC	Shih, C. C.	NAS 8-28736	1047
46	UNIV ALA-TUSCALOOSA	Schutzenhofer, L. A.	MSFC	Doughty, J. O.	NAS 8-30624	1081
46	UNIV CALIF-BERKELEY	Marek, C. J.	LERC	Steele, C. R.	NSG 3028	1469
46	UNIV OF CINCINNATI	Haas, J. E.	LERC	Tabakoff, W.	NGR 36-004-055	3028
46	UNIV OF KENTUCKY	Newson, B. D.	ARC	Knapp, C. E.	NAS 2-8883	2141
46	UNIV OF KENTUCKY	Jackson, M. M.	JSC	Lafferty, J. F.	NAS 9-14392	2143
46	UNIV OF MASS-AMHERST	Patterson, J. W.	MSFC	Crossley, F. R.	NAS 8-29073	2442
46	UNIV OF MIAMI	Housner, J. M.	LARC	Plass, H. J., Jr.	NSG 1044	1872

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46	UNIV MICH-ANN ARBOR	Priem, R. J.	LERC	Nicholls, J. A.	NGL 23-005-336	2484
46	UNIV OF NEW MEXICO	Hellbaum, R. F.	LARC	Richards, C. G.	NGR 32-004-026	2729
46	UNIV TENNESSEE-KNOXV	Fichtl, G. H.	MSFC	Frost, W.	NAS 8-29584	3213
46	UNIV TENNESSEE-KNOXV	Hill, C. K.	MSFC	Connell, J. R.	NAS 8-31197	3218
46	UNIV TEXAS-AUSTIN	Fries, J.	JSC	Hickox, C. E.	NAS 9-13865	3376
46	UNIV OF VIRGINIA	Sewall, J. L.	LARC	Pilkey, W. D.	NGR 47-005-145	3570
46	UNIV OF VIRGINIA	Cunningham, R. E.	LERC	Gunter, E. J.	NGL 47-005-050	3567
46	WASHINGTON UNIVERSTY	Deaton, J. W.	LARC	Wu, E. M.	NSG 1157	2608
47	ALFRED UNIVERSITY	Gangler, J. J.	HQ-RW	Frechette, V. D.	NASW 2504	2737
47	CAL STATE U-CHICO	Zill, L. P.	ARC	Sours, C. F.	NCA 2-10501	1244
47	CARNEGIE-MELLON UNIV	Witzke, W.	LERC	Bhat, G. K.	NAS 3-18929	3088
47	CARNEGIE-MELLON UNIV	Klopp, W. D.	LERC	Low, J. R., Jr.	NGR 39-087-003	3089
47	CARNEGIE-MELLON UNIV	Klopp, W. D.	LERC	Low, J. R., Jr.	NGR 39-087-047	3091
47	CASE WESTERN RESERVE	Quatinetz, M.	LERC	Ebert, L. J.	NGL 36-003-094	2976
47	CASE WESTERN RESERVE	Gray, H. R.	LERC	Hehemann, R. H.	NGR 36-027-051	2980
47	CASE WESTERN RESERVE	Probst, H. B.	LERC	Mitchell, T. E.	NSG 3027	2988
47	CASE WESTERN RESERVE	Fortini, A.	LERC	Dybbs, A.	NSG 3040	2989
47	CASE WESTERN RESERVE	Maltz, J.	HQ-RW	Manson, S. S.	NSG 7035	2993
47	COLUMBIA UNIVERSITY	Glasgow, T. K.	LERC	Tien, J. K.	NSG 3050	2781
47	CORNELL UNIVERSITY	Nelson, H. G.	ARC	Johnson, H. H.	NSG 2078	2820
47	CORNELL UNIVERSITY	Aron, P. R.	LERC	Ruoff, A. L.	NGR 33-010-189	2816
47	GEORGE WASHINGTON U	Swann, R. T.	LARC	Liebowitz, H.	NSG 1155	1801
47	GEORGETOWN UNIV	Allen, R. E.	MSFC	Leise, E. M.	NAS 8-29778	1807
47	GEORGIA INST OF TECH	Hasemeyer, E. A.	MSFC	Brown, J. L.	NAS 8-28735	1890
47	HIRAM COLLEGE	Buckley, D. H.	LERC	Wheeler, D. R.	NSG 3026	3000
47	LEHIGH UNIVERSITY	Zill, L. P.	ARC	Wei, R. P.	NCA 2-80501	3098
47	LEHIGH UNIVERSITY	Poe, C. C., Jr.	LARC	Arin, K.	NSG 1178	3106
47	LEHIGH UNIVERSITY	Ashbrook, R. L.	LERC	Kraft, R. W.	NGL 39-007-007	3099
47	LEHIGH UNIVERSITY	Misencik, J. A.	LERC	Wei, R. P.	NGR 39-007-067	3105
47	LEHIGH UNIVERSITY	Bond, J. B.	MSFC	Vanderhoff, J. W.	NAS 8-28654	3097
47	MASS INST OF TECH	Harris, J. W.	JSC	Uhlmann, D. R.	NGR 22-009-646	2385
47	MASS INST OF TECH	Byvik, C. E.	LARC	Gatos, H. C.	NSG 1190	2415
47	MASS INST OF TECH	Quatinetz, M.	LERC	Grant, N. J.	NGL 22-009-003	2357
47	MASS INST OF TECH	Scheuermann, C. M.	LERC	Flemings, M. C.	NSG 3046	2424
47	MASS INST OF TECH	Vary, A.	LERC	Williams, J. H., Jr.	NSG 3064	2426
47	MASS INST OF TECH	Davidson, M. C.	MSFC	Gatos, H. C.	NAS 8-30537	2348
47	MASS INST OF TECH	Chassay, R. P.	MSFC	Uhlmann, D. R.	NAS 8-31350	2352
47	MICHIGAN STATE UNIV	Elber, W.	LARC	Sharpe, W. N.	NSG 1148	2459
47	MISSISSIPPI STATE U	King, H. M.	MSFC	Hall, W. B.	NCA 8-107	2569
47	NO CAR A&T STATE U	Moynihan, P. I.	JPL	Craft, W. J.	NGR 34-012-013	2941
47	NO CAROLINA STATE U	Williams, D. P.	ARC	Isaacson, E.	NGR 34-002-175	2951
47	NO CAROLINA STATE U	Hagginbothom, W. K., Jr.	LARC	Manning, C. R., Jr.	NGR 34-002-108	2949
47	NO CAROLINA STATE U	Oneal, R. L.	LARC	Manning, C. R., Jr.	NSG 1133	2961
47	NO CAROLINA STATE U	Oneal, R. L.	LARC	Bailey, J. A.	NSG 1136	2962
47	NORTHWESTERN UNIV	Ludwig, L. P.	LERC	Burton, R. A.	NSG 3039	1970
47	OHIO STATE UNIV	Gray, H. R.	LERC	Beck, F. H.	NGL 36-008-051	3009
47	OLD DOMINION UNIV	Wieting, A. R.	LARC	Thornton, E. A.	NSG 1093	3540
47	PENNSYLVANIA STATE U	Hirschberg, M. H.	LERC	Zamrik, S. Y.	NGR 39-009-034	3126
47	PENNSYLVANIA STATE U	Sanders, W. A.	LERC	Bradt, R. C.	NSG 3016	3137
47	PURDUE UNIVERSITY	Gilstad, D. A.	HQ-RW	Dewitt, D. P.	NSR 15-005-037	2065
47	RENSSELAER POLY-NY	Lad, R. A.	LERC	Wiberly, S. E.	NGL 33-018-003	2868
47	RENSSELAER POLY-NY	Grimes, H. H.	LERC	Diefendorf, R. J.	NSG 3007	2876
47	RENSSELAER POLY-NY	Davidson, M. C.	MSFC	Petersen, G. W.	NAS 8-26146	2865
47	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Holnstrom, F.	NCA 2-75317	1281
47	SOUTHERN METHODIST U	Breckenridge, R. A.	LARC	Chu, T. L.	NGL 44-007-042	3290
47	STANFORD UNIVERSITY	Rubesin, M. W.	ARC	Reynolds, W. C.	NGR 05-020-622	1372
47	STANFORD UNIVERSITY	Williams, D. P.	ARC	Barnett, D. M.	NGR 05-020-662	1376
47	STANFORD UNIVERSITY	Poppa, H. R.	ARC	Pound, G. M.	NSG 2071	1396

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47	STANFORD UNIVERSITY	Whittenberger, J. D.	LERC	Sherby, O. D.	NGR 05-020-671	1378
47	STATE U NY-STONY BRK	Levine, S. R.	LERC	Seigle, L. L.	NGR 33-015-160	2902
47	SYRACUSE UNIVERSITY	Hirschberg, M. H.	LERC	Liu, H. W.	NGR 33-022-157	2919
47	TALLADEGA COLLEGE	McKannan, E. C.	MSFC	Morrison, R. A.	NSG 8010	1034
47	TENNESSEE STATE UNIV	Buckley, D. H.	LERC	Sutherland, C. W.	NGR 43-014-003	3203
47	UNIV ALA-HUNTSVILLE	Lacy, L. L.	MSFC	Otto, G. H.	NAS 8-27809	1043
47	UNIV ALA-HUNTSVILLE	Davidson, M. C.	MSFC	Castle, J. G., Jr.	NAS 8-29542	1049
47	UNIV ALA-HUNTSVILLE	Zwiener, J. M.	MSFC	Castle, J. G., Jr.	NAS 8-30774	1060
47	UNIV OF ARIZONA	Allen, R. E.	MSFC	Bier, M.	NAS 8-31537	1119
47	UNIV CALIF-BERKELEY	Zill, L. P.	ARC	Everhart, T. E.	NCA 2-50501	1427
47	UNIV CALIF-BERKELEY	Zill, L. P.	ARC	Everhart, T. E.	NCA 2-50510	1433
47	UNIV CALIF-BERKELEY	Stephens, J. R.	LERC	Morris, J. W.	NGR 05-003-562	1461
47	UNIV CALIF-L ANGELES	Poppa, H. R.	ARC	Douglass, D. L.	NSG 2025	1543
47	UNIV CALIF-L ANGELES	Johnson, R. L.	LERC	Amstutz, H. C.	NGR 05-007-338	1533
47	UNIV CALIF-SAN DIEGO	Woollam, J. A.	LERC	Oesterreicher, H.	NSG 3034	1593
47	UNIV OF CINCINNATI	Olson, W. T.	LERC	Harness, D.	NGR 36-004-056	3029
47	UNIV OF CONNECTICUT	Hasemeyer, E. A.	MSFC	Katahis, T. Z.	NAS 8-28734	1744
47	UNIV OF DENVER	Bement, L.	LARC	Wittman, R. H.	NAS 1-13817	1729
47	UNIV OF FLORIDA	Lad, R. A.	LERC	Hren, J. J.	NGL 10-005-039	1850
47	UNIV OF FLORIDA	Lad, R. A.	LERC	Hummel, R. E.	NGL 10-005-080	1851
47	UNIV OF KENTUCKY	Sanders, W. A.	LERC	Leipold, M. H.	NGL 18-001-042	2145
47	UNIV OF KENTUCKY	Brown, W. F., Jr.	LERC	Conrad, H.	NSG 3013	2151
47	UNIV MARYLAND-COL PK	Stephens, J. R.	LERC	Drew, H. D.	NSG 3001	2274
47	UNIV OF MIAMI	Shannon, J. L., Jr.	LERC	Craig, H. L., Jr.	NGR 10-007-118	1871
47	UNIV MICH-ANN ARBOR	Fichter, W. B.	LARC	Felbeck, D. K.	NGR 23-005-528	2492
47	UNIV MICH-ANN ARBOR	Freche, J. C.	LERC	Wilson, D. J.	NGL 23-005-005	2481
47	UNIV MICH-ANN ARBOR	Buckley, D. H.	LERC	Ludema, K. C.	NGR 23-005-603	2499
47	UNIV MO-ROLLA	Zill, L. P.	ARC	Levenson, L. L.	NCA 2-50501	2592
47	UNIV NEBRASKA-LINCLN	Nelson, H. G.	ARC	Johnson, D. L.	NGR 28-004-025	2619
47	UNIV OF PITTSBURGH	Stephens, J. R.	LERC	Meier, G. H.	NGR 39-011-164	3163
47	UNIV TENNESSEE-KNOXV	Newman, J. C., Jr.	LARC	Wright, M. A.	NSG 1163	3227
47	UNIV OF WASHINGTON	Lad, R. A.	LERC	Mueller, J. I.	NGL 48-002-004	3638
47	UNIV WISC-MADISON	Williams, J. R.	MSFC	Heine, R. W.	NAS 8-28733	3683
47	VANDERBILT UNIVERSTY	Allen, R. V.	MSFC	Kinser, D. L.	NAS 8-29460	3234
47	VANDERBILT UNIVERSTY	Caruso, S. V.	MSFC	Kinser, D. L.	NAS 8-30883	3236
47	VANDERBILT UNIVERSTY	Brennecke, M. W.	MSFC	Wert, J. J.	NAS 8-31556	3237
47	VIRGINIA POLY INST	Williams, D. P.	ARC	Brinson, H. F.	NSG 2038	3626
47	VIRGINIA POLY INST	Stein, B. A.	LARC	Lytton, J. L.	NGR 47-004-108	3605
47	VIRGINIA POLY INST	Tenney, D. R.	LARC	Houska, C. R.	NSG 1214	3624
47	WASHINGTON ST UNIV	Yates, I. C., Jr.	MSFC	Johnson, A. A.	NAS 8-29725	3657
47	WAYNE STATE UNIV	Allen, R. E.	MSFC	Brown, R. K.	NAS 8-29823	2513
47	OREGON GRADUATE CTR	Morris, J. F.	LERC	Swanson, L. W.	NSG 3054	3072
49	AUBURN UNIV-AUBURN	Craighead, P. T.	MSFC	Boland, J. S., III	NAS 8-29852	1018
49	AUBURN UNIV-AUBURN	Carter, C. H.	HQ-P	Vachon, R. I.	NGT 01-003-044	1028
49	AUBURN UNIV-AUBURN	Carter, C. H.	HQ-P	O'Brien, J. F.	NGT 01-003-045	1029
49	BUCKNELL UNIVERSITY	Seasholtz, R. G.	LERC	Maxwell, B. R.	NGR 39-027-003	3087
49	CALIF INST OF TECH	Davis, R. C.	LARC	Babcock, C. D., Jr.	NSG 1005	1231
49	CALIF INST OF TECH	Pontious, C. E.	HQ-RE	Ingargiola, G.	NGR 05-002-340	1229
49	CASE WESTERN RESERVE	Labus, T. L.	LERC	Ostrach, S.	NSG 3053	2990
49	CASE WESTERN RESERVE	Carter, C. H.	HQ-P	Prahl, J. M.	NGT 36-027-011	2985
49	CATHOLIC UNIVERSITY	Carter, C. H.	HQ-P	Fang, B. T.	NGT 09-005-093	1776
49	COLORADO STATE UNIV	Fichtl, G. H.	MSFC	Winn, C. B.	NAS 8-31347	1669
49	CORNELL UNIVERSITY	Tarver, P.	HQ-SL	Wehe, R. L.	NASW 2573	2794
49	CORNELL UNIVERSITY	Tarver, P.	HQ-SL	Wehe, R. L.	NASW 2750	2795
49	GEORGE WASHINGTON U	Moore, J. V.	GSFC	Kahn, W. K.	NGR 09-010-090	1797
49	GEORGE WASHINGTON U	Anderson, A. F.	LARC	Liebowitz, H.	NGL 09-010-053	1792
49	GEORGE WASHINGTON U	Maltz, J.	HQ-RW	Unavailable	NASW 2587	1789
49	GEORGIA INST OF TECH	Hein, G. F.	LERC	Zimmer, R. P.	NAS 3-17827	1882

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FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
49	GEORGIA INST OF TECH	Stevenson, S.	LERC	Camp, A. A.	NAS 3-19700	1885
49	GEORGIA INST OF TECH	Smith, O. E.	MSFC	Justus, C. G.	NAS 8-30657	1897
49	HAMPTON INSTITUTE	Marushi, C. B.	LARC	Sunshine, D. R.	NSG 1162	3500
49	HOWARD UNIVERSITY	Pohly, J. G.	HQ-P	Cox, E. L.	NGT 09-011-058	1818
49	JACKSON STATE UNIV	Zuk, J.	LERC	Chu, C. S.	NSG 3004	2557
49	LINCOLN UNIV-PA	Pohly, J. G.	HQ-P	Williams, W., Jr.	NGT 39-108-750	3108
49	MASS INST OF TECH	Doolin, B. F.	ARC	Athans, M.	NGL 22-009-124	2363
49	MASS INST OF TECH	Doolin, B. F.	ARC	Athans, M.	NSG 2076	2420
49	MASS INST OF TECH	Chamis, C. C.	LERC	McGarry, F. G.	NSG 3044	2423
49	MASS INST OF TECH	Hasemeyer, E. A.	MSFC	Masubuchi, K.	NAS 8-24364	2341
49	MISSISSIPPI STATE U	Montgomery, W. D.	NSTL	Forbes, R. E.	NAS13-10	2568
49	NEW MEX ST U-LAS CR	Pohly, J. G.	HQ-P	Zimmerman, R. M.	NGT 32-003-750	2711
49	NEW YORK UNIVERSITY	Labus, T. L.	LERC	Keller, J. B.	NSG 3059	2847
49	NORFOLK STATE COL	Mehrens, H. E.	LARC	Jacobs, J. A.	NSG 1073	3503
49	NO CAR A&T STATE U	Pohly, J. G.	HQ-P	Chandra, S.	NGT 34-012-750	2942
49	NO CAROLINA STATE U	Carter, C. H.	HQ-P	Hart, F. D.	NGT 34-002-097	2956
49	OLD DOMINION UNIV	Martin, D. J.	LARC	Ousterhout, D. S.	NAS 1-11707	3507
49	OLD DOMINION UNIV	Holmes, H. K.	LARC	Zuckerwar, A. J.	NSG 1039	3528
49	OLD DOMINION UNIV	Davis, J. G., Jr.	LARC	Thornton, E. A.	NSG 1043	3532
49	OLD DOMINION UNIV	Marushi, C. B.	LARC	Crossman, G. R.	NSG 1172	3554
49	OLD DOMINION UNIV	Carter, C. H.	HQ-P	Goglia, G. L.	NGT 47-003-028	3523
49	OLD DOMINION UNIV	Carter, C. H.	HQ-P	Goglia, G. L.	NGT 47-003-029	3524
49	PENNSYLVANIA STATE U	Janow, C.	HQ-RE	Shearer, J. L.	NGL 39-009-023	3122
49	PRAIRIE VIEW A&M U	Pohly, J. G.	HQ-P	Greaux, A. E.	NGT 44-033-750	3266
49	PRINCETON UNIVERSITY	Kelsall, T. N.	GSFC	Lowrance, J. L.	NAS 5-20507	2651
49	PRINCETON UNIVERSITY	Kelsall, T. N.	GSFC	Lowrance, J. L.	NSG 5063	2683
49	PRINCETON UNIVERSITY	Lazarus, A. J.	LARC	Stoenescu, M. L.	NSG 1129	2679
49	PURDUE UNIVERSITY	Gregory, T. J.	ARC	Garrett, R. E.	NGR 15-005-180	2060
49	PURDUE UNIVERSITY	Pritchard, J. A.	GSFC	Phillips, T. L.	NAS 5-20922	2041
49	RENSSELAER POLY-NY	Tarver, P.	HQ-SL	Yerazunis, S. W.	NGL 33-018-091	2870
49	RICE UNIVERSITY	Hartman, O. B.	HQ-MT	Trotti, G.	NASW 2776	3278
49	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Myronuk, D. J.	NCA 2-75601	1299
49	SO UNIV-BATON ROUGE	Pohly, J. G.	HQ-P	Burrell, M. Q.	NGT 19-005-750	2172
49	STANFORD UNIVERSITY	Kenyon, G. C.	ARC	Shvell, R. S.	NAS 2-7199	1309
49	STANFORD UNIVERSITY	Zill, L. P.	ARC	Baganoff, D.	NCA 2-45507	1329
49	STANFORD UNIVERSITY	Doolin, B. F.	ARC	Bryson, A. E.	NGL 05-020-007	1344
49	STANFORD UNIVERSITY	Jones, J. L.	ARC	Thompson, D. A.	NGR 05-020-345	1361
49	STANFORD UNIVERSITY	Keating, G. M.	LARC	Debra, D. B.	NSG 1210	1389
49	STANFORD UNIVERSITY	Carter, C. H.	HQ-P	Adams, J. L.	NGT 05-020-409	1384
49	STANFORD UNIVERSITY	Carter, C. H.	HQ-P	Bershadler, D.	NGT 05-020-412	1385
49	TENNESSEE STATE UNIV	Pohly, J. G.	HQ-P	Clark, Y. Y.	NGT 43-014-750	3204
49	TEXAS A&I UNIVERSITY	Pohly, J. G.	HQ-P	Franke, E. A.	NGT 44-073-750	3294
49	TEXAS A&M UNIVERSITY	Nitschke, H. A.	JSC	Schell, J. A.	NAS 9-14493	3315
49	TUFTS UNIVERSITY	Ahtye, W. F.	ARC	Cole, J. E., III	NGR 22-012-031	2441
49	TUSKEGEE INSTITUTE	Pohly, J. G.	HQ-P	Dybczak, Z. W.	NGT 01-005-750	1037
49	UNIV ALA-HUNTSVILLE	Fields, S. A.	MSFC	Walters, H. U.	NAS 8-30286	1055
49	UNIV ALA-TUSCALOOSA	Clarke, W. D.	MSFC	Hill, J. L.	NAS 8-28019	1074
49	UNIV ALA-TUSCALOOSA	Morton, R. R.	MSFC	April, G. C.	NAS 8-29100	1076
49	UNIV ALA-TUSCALOOSA	Carter, C. H.	HQ-P	Barfield, B. F.	NGT 01-002-080	1084
49	UNIV OF ARIZONA	Zill, L. P.	ARC	Thompson, R. I.	NCA 2-40504	1126
49	UNIV CALIF-BERKELEY	Ricciello, S. R.	ARC	Williamson, R. B.	NAS 2-8288	1408
49	UNIV CALIF-BERKELEY	Zill, L. P.	ARC	Bhattacharyya, G. K.	NCA 2-50504	1430
49	UNIV CALIF-L ANGELES	Seltzer, S. M.	MSFC	Likins, P. W.	NAS 8-28358	1501
49	UNIV CALIF-SAN DIEGO	Schaefer, D. H.	GSFC	Lee, S. H.	NGR 05-009-264	1592
49	UNIV OF CINCINNATI	Williams, J. G.	LARC	Sobel, L. H.	NGR 36-004-065	3032
49	UNIV OF CINCINNATI	Mikulas, M. M.	LARC	Nayfeh, A. H.	NSG 1185	3036
49	UNIV OF CONNECTICUT	Shepherd, W. T.	LARC	Cooker, H. S.	NSG 1082	1747
49	UNIV OF FLORIDA	Jorolan, A. E.	KSC	Farber, E. A.	NAS10-8051	1843

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49	UNIV OF HOUSTON	Batson, B. H.	JSC	Simpson, R. S.	NAS 9-11845	3333
49	UNIV OF HOUSTON	Downs, W. R.	JSC	Howell, J. R.	NAS 9-14516	3343
49	UNIV OF HOUSTON	Eandi, B. K.	JSC	Huang, C. J.	NGL 44-005-090	3354
49	UNIV OF HOUSTON	Carter, C. H.	HQ-P	Huang, C. J.	NGT 44-005-114	3362
49	UNIV OF HOUSTON	Carter, C. H.	HQ-P	Huang, C. J.	NGT 44-005-115	3363
49	UNIV ILLINOIS-URBANA	Siewert, R. D.	LERC	Strehlow, R. A.	NSG 3056	2022
49	UNIV OF KANSAS	Horton, V. W.	FRC	Muirhead, V. U.	NSG 4004	2130
49	UNIV OF KANSAS	Pratt, B. W.	JSC	Moore, R. K.	NAS 9-13347	2118
49	UNIV MARYLAND-COL PK	Alford, W. A.	GSFC	Rosenfeld, A.	NGR 21-002-351	2254
49	UNIV MARYLAND-COL PK	Degnan, J. J.	GSFC	Hochuli, U. E.	NSG 5042	2277
49	UNIV MARYLAND-COL PK	Carter, C. H.	HQ-P	Emad, F. P.	NGT 21-002-254	2267
49	U MINN-MNPLS-ST PAUL	Sizemore, K. O.	GSFC	Cahill, L. J., Jr.	NAS 5-11173	2525
49	U MINN-MNPLS-ST PAUL	Wainscott, F. H.	GSFC	Winckler, J. R.	NAS 5-11687	2528
49	UNIV MO-ROLLA	Flatley, T. W.	GSFC	Taylor, J. M.	NGR 26-003-069	2593
49	UNIV NEBRASKA-LINCLN	Szajna, E. F.	GSFC	Carlson, M.	NAS 5-20814	2613
49	UNIV OF NEW MEXICO	Hyland, R. F.	LERC	Long, W. W.	NAS 3-18522	2714
49	UNIV OF NEW MEXICO	Hyland, R. F.	LERC	Shinnick, W. A.	NAS 3-19434	2715
49	UNIV OF NEW MEXICO	Pohly, J. G.	HQ-P	Theye, L. A.	NGT 32-004-750	2733
49	UNIV OF PERU	Christie, C. J.	GSFC	Unavailable	NASW 7	3729
49	UNIV OF RHODE ISLAND	Suttles, J. T.	LARC	Spaulding, M. L.	NSG 1008	3179
49	UNIV OF ROME	Goozh, P. E.	HQ-SV	Unavailable	NASW 1761	3727
49	UNIV OF SANTA CLARA	Doolin, B. F.	ARC	Siljak, D. D.	NGR 05-017-010	1634
49	UNIV OF SANTA CLARA	Seltzer, S. M.	MSFC	Siljak, D. D.	NAS 8-27799	1623
49	UNIV TENNESSEE-KNOXV	Velez, C. E.	GSFC	Feagin, T.	NSG 5040	3230
49	UNIV TEXAS-AUSTIN	Fuchs, A. J.	GSFC	Tapley, B. D.	NAS 5-20946	3366
49	UNIV TEXAS-AUSTIN	Fuchs, A. J.	GSFC	Tapley, B. D.	NGR 44-012-269	3398
49	UNIV TEXAS-AUSTIN	Richard, R. R.	JSC	Hartwig, W. H.	NAS 9-14491	3378
49	UNIV TEXAS-AUSTIN	Eandi, B. K.	JSC	McKetta, J. J.	NGL 44-012-133	3383
49	UNIV TEXAS-AUSTIN	Pinson, L. D.	LARC	Craig, R. R.	NSG 1001	3402
49	UNIV TEXAS-EL PASO	Pohly, J. G.	HQ-P	Guard, R. W.	NGT 44-085-750	3430
49	UNIV OF TOLEDO	Ramler, J. R.	LERC	Leininger, G. G.	NAS 3-17826	3045
49	UNIV OF TOLEDO	Willoh, R. G.	LERC	Leininger, G. G.	NGR 36-010-024	3047
49	UNIV OF VIRGINIA	Hueschen, R. M.	LARC	Cook, G.	NSG 1101	3582
49	UNIV WISC-MADISON	Oberright, J. E.	GSFC	Dombrowski, R. M.	NAS 5-20068	3673
49	UTAH STATE UNIV	Doolin, B. F.	ARC	Martin, C.	NSG 2022	3473
49	VIRGINIA POLY INST	Hrastar, J. A.	GSFC	Meirovitch, L.	NGR 47-004-100	3603
49	VIRGINIA POLY INST	Martin, D. J.	LARC	Robertson, R. M.	NAS 1-13175	3591
49	VIRGINIA POLY INST	Davis, J. G., Jr.	LARC	Herakovich, C. T.	NGR 47-004-129	3609
49	VIRGINIA POLY INST	Baumeister, K. J.	LERC	Robertson, R. A.	NAS 3-18553	3593
49	VIRGINIA STATE COL	Mehrens, H. E.	LARC	Van Dyke, A.	NGR 47-014-007	3631
49	WEST VIRGINIA UNIV	Phillips, B.	LERC	Wen, C. Y.	NAS 3-19725	3659
49	YOUNGSTOWN STATE U	Hueschen, R. M.	LARC	Foulkes, R. H., Jr.	NSG 1199	3056
51	ALABAMA A&M UNIV	Downs, S. W.	MSFC	Sharma, G. C.	NGR 01-001-023	1003
51	AUBURN UNIV-AUBURN	Downs, S. W.	MSFC	Hagler, T. B.	NAS 8-29856	1019
51	BAYLOR COL OF MED	Haines, R. F.	ARC	Decker, T. A.	NGR 44-003-057	3256
51	BAYLOR COL OF MED	Homick, J. L.	JSC	Igarashi, M.	NAS 9-14546	3250
51	BISHOP COLLEGE	Danellis, J. V.	ARC	Kutsky, R. J.	NGR 44-032-013	3257
51	BOSTON UNIVERSITY	Jacobs, G. J.	HQ-ER	MacKay, R. S.	NGR 22-004-024	2292
51	BOWLING GRN STATE U	Miquel, J.	ARC	Oster, I. I.	NGR 36-017-004	2971
51	BRYN MAWR COLLEGE	Hoffman, R. A.	JSC	Oppenheimer, J. M.	NAS 9-14640	3085
51	CALIF INST OF TECH	Williams, T. S., Jr.	LARC	Horowitz, N. H.	NAS 1-12311	1184
51	CALIF INST OF TECH	Young, R. S.	HQ-SL	Horowitz, N. H.	NGR 05-002-121	1212
51	CAL STATE U-FULLERTN	Zill, L. P.	ARC	Esser, A. F.	NCA 2-53501	1248
51	CAL STATE U-FULLERTN	Zill, L. P.	ARC	Esser, A. F.	NCA 2-53601	1249
51	CATHOLIC UNIVERSITY	Saunders, J. F.	HQ-MM	Decicco, B. T.	NGR 09-005-022	1770
51	CENTRAL ST UNIV-OHIO	Winget, C. M.	ARC	Nduaguba, J. C.	NSG 2074	2996
51	CENTRAL ST UNIV-OHIO	Raquet, C. A.	LERC	Rubin, D.	NGR 36-033-002	2994
51	CENTRAL ST UNIV-OHIO	Fordyce, J. S.	LERC	Craft, T. J., Sr.	NGR 36-033-003	2995

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51	COLLEGE OF WM & MARY	Hoffman, R. A.	JSC	Aceto, H., Jr.	NGR 47-006-054	3484
51	COLORADO STATE UNIV	Holton, E. M.	ARC	Jordan, J. P.	NGR 06-002-075	1674
51	COLORADO STATE UNIV	Hoffman, R. A.	JSC	Lett, J. T.	NGR 06-002-128	1680
51	CORNELL UNIVERSITY	Tremor, J. W.	ARC	Steward, F. C.	NAS 2-7846	2786
51	CORNELL UNIVERSITY	Geib, D. S.	HQ-SL	Duxbury, J. M.	NGR 33-010-127	2806
51	DELAWARE STATE COL	Picciolo, G. L.	GSFC	Bush, V. N.	NGR 08-002-003	1760
51	EMORY UNIVERSITY	Holton, E. M.	ARC	Popovic, V. P.	NGL 11-001-009	1877
51	EMORY UNIVERSITY	Winter, D. L.	ARC	Bourne, G. H.	NGR 11-001-016	1879
51	FLORIDA STATE UNIV	Young, R. S.	HQ-SL	Larock, P. A.	NGR 10-004-041	1836
51	GEORGIA INST OF TECH	Williams, T. S., Jr.	LARC	Hubbard, J. S.	NAS 1-13422	1881
51	GEORGIA INST OF TECH	Young, R. S.	HQ-SL	Hubbard, J. S.	NSG 7069	1922
51	HARDIN-SIMMONS UNIV	Hall, L. B.	HQ-SL	Foster, T. L.	NGR 44-095-001	3258
51	INDIANA U-BLOOMINGTN	Weisoman, N. W.	ARC	Neff, W. D.	NGR 15-003-007	2035
51	INDIANA U-INDIANAPLS	Haymaker, W. E.	ARC	Zeman, W.	NAS 2-7927	2038
51	JACKSON STATE UNIV	Pohly, J. G.	HQ-P	Nelson, F. R.	NGR 25-011-001	2555
51	UNIV OF NEW ORLEANS	Rummel, J. A.	JSC	Laseter, J. L.	NAS 9-12941	2186
51	MASS INST OF TECH	Daunton, N. G.	ARC	Worden, F. G.	NGR 22-009-726	2391
51	MASS INST OF TECH	Daunton, N. G.	ARC	Bizzi, E.	NGR 22-009-798	2403
51	MASS INST OF TECH	Daunton, N. G.	ARC	Nauta, W. J.	NGR 22-009-826	2408
51	MASS INST OF TECH	Williams, T. S., Jr.	LARC	Rich, A.	NAS 1-9691	2329
51	MASS INST OF TECH	Young, R. S.	HQ-SL	Biemann, K.	NGR 22-009-005	2372
51	MISS VALLEY ST UNIV	Wolverton, B. C.	MSFC	Sethi, S. L.	NSG 8009	2575
51	NORTH GEORGIA COL	Downs, S. W.	MSFC	Biesbrock, J. A.	NAS 8-30619	1930
51	PENNSYLVANIA STATE U	Young, R. S.	HQ-SL	Casida, L. E., Jr.	NGR 39-009-180	3128
51	RENSSELAER POLY-NY	Geib, D. S.	HQ-SL	Wedler, F. C.	NSG 7065	2878
51	RICE UNIVERSITY	Zieglschmid, J. F.	JSC	Ward, C. H.	NAS 9-12912	3277
51	SAN FRAN STATE UNIV	Zill, L. P.	ARC	Auleb, L.	NCA 2-60506	1278
51	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Haight, R. D.	NCA 2-75506	1289
51	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Young, W.	NCA 2-75521	1298
51	SOUTHEASTN STATE COL	Bostwick, L. G.	KSC	Robinson, J. L.	NSG 802	3064
51	SO ILL UNIV-CARBONDL	Young, R. S.	HQ-SL	Yopp, J. H.	NGR 14-008-026	1973
51	STANFORD UNIVERSITY	Miquel, J.	ARC	Bensch, K. G.	NAS 2-6706	1308
51	STANFORD UNIVERSITY	Williams, T. S., Jr.	LARC	Lederberg, J.	NAS 1-9692	1306
51	STANFORD UNIVERSITY	Young, R. S.	HQ-SL	Lederberg, J.	NGR 05-020-004	1359
51	STATE UNIV NY-ALBANY	Rummel, J. A.	JSC	Farhi, L. E.	NSG 9028	2886
51	STATE UNIV NY-BUFFAL	Allen, R. E.	MSFC	Bigazzi, P. E.	NAS 8-31292	2888
51	STATE UNIV NY-BUFFAL	Vaughn, C. R.	WFC	Williams, T. C.	NGL 33-183-012	2890
51	TEXAS A&M UNIVERSITY	Hoffman, R. A.	JSC	Kuchnow, K. P.	NAS 9-13647	3308
51	TULANE UNIVERSITY	Zill, L. P.	ARC	Brizze, K. R.	NCA 2-00402	2180
51	UNIV ALA-HUNTSVILLE	Morton, R. R.	MSFC	Rossing, L. M.	NAS 8-30772	1059
51	UNIV CALIF-BERKELEY	Zill, L. P.	ARC	Nicoll, C. S.	NCA 2-50509	1432
51	UNIV CALIF-DAVIS	Taketa, S. T.	ARC	Mazelis, M.	NAS 2-8685	1474
51	UNIV CALIF-DAVIS	Zill, L. P.	ARC	Evans, J. W.	NCA 2-80505	1481
51	UNIV CALIF-DAVIS	Oyama, J.	ARC	Smith, A. H.	NGL 05-004-008	1483
51	UNIV CALIF-DAVIS	Holton, E. M.	ARC	Horowitz, J. M.	NGR 05-004-099	1486
51	UNIV CALIF-L ANGELES	Tremor, J. W.	ARC	Lindberg, R. G.	NAS 2-8646	1492
51	UNIV CALIF-L ANGELES	Daunton, N. G.	ARC	Markham, C. H.	NGR 05-007-418	1539
51	UNIV CALIF-SAN DIEGO	Young, R. S.	HQ-SL	Yayanos, A. A.	NGR 05-009-213	1584
51	UNIV CALIF-SAN FRAN	Zill, L. P.	ARC	Degroot, J.	NCA 2-65301	1601
51	UNIV CALIF-SAN FRAN	Zill, L. P.	ARC	Dallman, M. F.	NCA 2-65401	1602
51	UNIV CALIF-SAN FRAN	Zill, L. P.	ARC	Aly, R.	NCA 2-65402	1603
51	UNIV CALIF-SAN FRAN	Zill, L. P.	ARC	Dallman, M. F.	NCA 2-65502	1604
51	UNIV OF CHICAGO	Daunton, N. G.	ARC	Goldberg, J. M.	NGR 14-001-225	1997
51	UNIV OF FLORIDA	Williams, B. A.	ARC	Heath, J. E.	NSG 2028	1859
51	UNIV OF HAWAII	Taketa, S. T.	ARC	Siegel, S. M.	NAS 2-8687	1940
51	UNIV OF HAWAII	Young, R. S.	HQ-SL	Siegel, S. M.	NGL 12-001-042	1946
51	UNIV OF HOUSTON	Zill, L. P.	ARC	Bartel, A. H.	NCA 2-95503	3351
51	UNIV OF HOUSTON	Zieglschmid, J. F.	JSC	Cowles, J.	NAS 9-13262	3336

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51	UNIV OF LOUISVILLE	Mehler, W. R.	ARC	Fuller, P. M.	NSG 2067	2154
51	UNIV OF LOUISVILLE	Hoffman, R. A.	JSC	Keefe, J. R.	NAS 9-14632	2153
51	U MINN-MNPLS-ST PAUL	Hall, L. B.	HQ-SL	Straub, C. P.	NGL 24-005-160	2535
51	UNIV MO-COLUMBIA	Holton, E. M.	ARC	Musacchia, X. J.	NGL 26-004-021	2588
51	UNIV OF NEW MEXICO	Zill, L. P.	ARC	Riedesel, M. L.	NCA 2-10502	2718
51	UNIV ORGEON-HLTH CTR	Allen, R. E.	MSFC	Knox, R. J.	NAS 8-30887	3083
51	UNIV OF PENNSYLVANIA	Zill, L. P.	ARC	Brown, A. H.	NAS 2-7730	3142
51	UNIV OF PENNSYLVANIA	Zill, L. P.	ARC	Brown, A. H.	NGR 39-010-149	3145
51	UNIV OF PENNSYLVANIA	Horrigan, D. J.	JSC	Lambertson, C. J.	NSG 9011	3148
51	UNIV OF ROCHESTER	Young, R. S.	HQ-SL	Hempfling, W. P.	NGR 33-019-002	2923
51	UNIV SAN FRANCISCO	Zill, L. P.	ARC	Furst, A.	NCA 2-70501	1617
51	UNIV SAN FRANCISCO	Miquel, J.	ARC	Benton, E. V.	NSG 2063	1622
51	UNIV SAN FRANCISCO	Bailey, J. V.	JSC	Benton, E. V.	NAS 9-12466	1615
51	UNIV SAN FRANCISCO	Taylor, G. R.	JSC	Benton, E. V.	NAS 9-14396	1616
51	UNIV OF SANTA CLARA	Zill, L. P.	ARC	Tomlison, G.	NCA 2-85509	1632
51	UNIV OF SO CAROLINA	Young, R. S.	HQ-SL	Rohlfing, D. L.	NSG 7096	3193
51	UNIV TEX-DENTAL BRCH	Buchanan, P.	JSC	Brown, L. R.	NAS 9-11118	3428
51	UNIV TEXAS-GALVESTON	Harris, J. W.	JSC	Lindsay, J. F.	NGR 44-088-008	3435
51	U TEX HEALTH CTR-DAL	Unavailable	ARC	Unavailable	NAS 2-3082	3437
51	UNIV OF UTAH	Zill, L. P.	ARC	Smith, L. M.	NCA 2-21601	3459
51	UNIV OF VIRGINIA	Mehler, W. R.	ARC	Ebbesson, S. O.	NGR 47-005-186	3574
51	UNIV OF VIRGINIA	Oyama, J.	ARC	Pitts, G. C.	NGR 47-005-213	3578
51	UNIV OF WASHINGTON	Geib, D. S.	HQ-SL	Gordon, M. P.	NGR 48-002-130	3647
51	UNIV WISC-GREEN BAY	Waligora, J. M.	JSC	Kaufman, W. C.	NSG 9017	3666
51	UNIV WISC-MADISON	Taketa, S. T.	ARC	Tibbetts, T. W.	NAS 2-7314	3668
51	UTAH STATE UNIV	Geib, D. S.	HQ-SL	Salisbury, F. B.	NGR 45-002-008	3471
51	VASSAR COLLEGE	Zill, L. P.	ARC	Christensen, C.	NCA 2-23501	2927
51	VIRGINIA COMNWLTH U	Wilkins, J. R.	LARC	Dalton, H. P.	NGL 47-002-020	3587
51	VIRGINIA COMNWLTH U	Saunders, J. F.	HQ-MM	Ham, W. T.	NGL 47-002-005	3586
51	XAVIER UNIV-LA	Winget, C. M.	ARC	Ashman, P. U.	NGR 19-007-004	2189
51	YALE UNIVERSITY	Young, R. S.	HQ-SL	Morowitz, H. J.	NGR 07-004-009	1754
51	OREGON GRADUATE CTR	Zill, L. P.	ARC	Swanson, L. W.	NCA 2-85501	3071
52	BAYLOR COL OF MED	Leach, C. S.	JSC	Campbell, B. O.	NAS 9-10537	3239
52	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Criswell, B. S.	NAS 9-14322	3245
52	BAYLOR COL OF MED	Kaplan, H. L.	JSC	Duncan, W. C.	NAS 9-14407	3248
52	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Johnson, P. C.	NAS 9-14662	3253
52	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Nichols, B. L.	NGR 44-003-053	3255
52	BOSTON UNIVERSITY	Hoffler, G. W.	JSC	Chobanion, A. V.	NGR 22-004-021	2291
52	BOSTON UNIVERSITY	Arnoldi, L. B.	HQ-JG	Hershberg, P. I.	NSG 7063	2297
52	FEDERAL CITY COLLEGE	Alterescu, S.	GSFC	Friedman, C.	NGR 09-050-013	1783
52	GALLAUDET COLLEGE	Chen, W.	GSFC	Tobin, H.	NSG 5019	1787
52	HARDING COLLEGE	Rummel, J. A.	JSC	Oree, H. D.	NAS 9-14134	1174
52	HARVARD UNIVERSITY	Young, D. R.	ARC	Tashjian, A. H., Jr.	NGR 22-007-256	2315
52	HOWARD UNIVERSITY	Chen, W.	GSFC	Fischmann, E. J.	NGR 09-011-055	1814
52	INDIANA U-BLOOMINGTN	Vinograd, S. P.	HQ-MM	Maickel, R. P.	NGL 15-003-117	2034
52	LINCOLN UNIV-PA	Alterescu, S.	GSFC	Frankowsky, J. W.	NSG 5008	3109
52	OHIO STATE UNIV	Brownstein, H. S.	HQ-MM	Ellingson, H. V.	NGT 36-008-007	3018
52	STANFORD UNIVERSITY	Sandler, H.	ARC	Harrison, D. C.	NGL 05-020-305	1354
52	STANFORD UNIVERSITY	Danellis, J. V.	ARC	Luetscher, J. A.	NGR 05-020-456	1366
52	STANFORD UNIVERSITY	Sandler, H.	ARC	Harrison, D. C.	NGR 05-020-634	1374
52	STANFORD UNIVERSITY	Sandler, H.	ARC	Popp, R.	NSG 2020	1392
52	ST U NY-DNST MED CTR	Chen, W. T.	GSFC	Fealey, R. D.	NAS 5-22277	2915
52	UNIV CALIF-DAVIS	Zill, L. P.	ARC	Berauer, E. D.	NCA 2-80401	1476
52	UNIV CALIF-DAVIS	Smith, M. C., Jr.	JSC	Vogel, J. M.	NAS 9-13589	1475
52	UNIV CALIF-IRVINE	Mandel, A. D.	ARC	Tilles, J. G.	NGR 05-041-012	1487
52	UNIV CALIF-SAN DIEGO	Sandler, H.	ARC	Baily, N. A.	NGR 05-009-257	1590
52	UNIV OF HOUSTON	Schneider, H. J.	JSC	Zlatkis, A.	NAS 9-13457	3337
52	UNIV OF HOUSTON	Schneider, H. J.	JSC	Zlatkis, A.	NAS 9-14629	3347

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52	UNIV ILLINOIS-URBANA	Jones, W. L.	HQ-MM	Ades, H. W.	NGL 14-005-074	2006
52	UNIV OF MIAMI	Leach, C. S.	JSC	Epstein, M.	NGR 10-007-097	1869
52	UNIV OF MIAMI	Zimmerman, R.	HQ-KT	Kline, J.	NGR 10-007-113	1870
52	UNIV MO-COLUMBIA	Sandler, H.	ARC	Hahn, A. W.	NGR 26-004-099	2589
52	UNIV SAN FRANCISCO	Zill, L. P.	ARC	Furst, A.	NCA 2-70503	1618
52	UNIV TEXAS-GALVESTON	Sandler, H.	ARC	Stone, H. L.	NGR 44-088-002	3434
52	U TEX HEALTH CTR-SA	Leach, C. S.	JSC	Morgan, W. W.	NSG 9012	3440
52	U TEX HEALTH CTR-DAL	Hoffler, G. W.	JSC	Blomquist, C. G.	NSG 9026	3438
52	UNIV OF VIRGINIA	Zill, L. P.	ARC	Updike, O. L.	NCA 2-25501	3566
52	UNIV WISC-MADISON	Young, D. R.	ARC	Cameron, J. R.	NGR 50-002-051	3691
52	UNIV WISC-MADISON	Mandel, A. D.	ARC	Dick, E. C.	NGR 50-002-174	3693
52	UNIV WISC-MADISON	Mandel, A. D.	ARC	Balish, E.	NGR 50-002-191	3695
52	UNIV WISC-MADISON	Mandel, A. D.	ARC	Dick, E. C.	NSG 2002	3701
52	WEST VIRGINIA UNIV	Danellis, J. V.	ARC	Moran, W. H.	NGL 49-001-019	3660
52	WEST VIRGINIA UNIV	Harrison, G. A.	ARC	Leovy, C. B.	NGR 49-001-048	3661
52	YALE UNIVERSITY	Mandel, A. D.	ARC	Evans, A. S.	NGR 07-004-146	1756
53	BAYLOR COL OF MED	Smith, M. C., Jr.	JSC	Nichols, B. L.	NAS 9-12728	3241
53	BAYLOR COL OF MED	Shumate, W. H.	JSC	Roessler, R.	NAS 9-13452	3242
53	BAYLOR COL OF MED	Smith, M. C., Jr.	JSC	Johnson, P. C.	NAS 9-13737	3244
53	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Rich, R. R.	NAS 9-14368	3246
53	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Martin, R. R.	NAS 9-14406	3247
53	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Criswell, B. S.	NAS 9-14468	3249
53	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Gentry, L. O.	NAS 9-14603	3251
53	BAYLOR COL OF MED	Rummel, J. A.	JSC	Cardus, D.	NAS 9-14661	3252
53	CORNELL UNIVERSITY	Sandler, H.	ARC	Reis, D. J.	NGR 33-010-179	2813
53	DARTMOUTH COLLEGE	Leach, C. S.	JSC	Galton, V. A.	NAS 9-14439	2626
53	DUKE UNIVERSITY	Harmaker, W. E.	ARC	Vogel, F. S.	NAS 2-7655	2931
53	HOWARD UNIVERSITY	Sandler, H.	ARC	Hawthorne, E. W.	NGL 09-011-017	1809
53	HOWARD UNIVERSITY	Alterescu, S.	GSFC	Herson, J.	NSG 5016	1821
53	JOHNS HOPKINS UNIV	Gross, F. C.	GSFC	Rubin, R. J.	NAS 5-22071	2202
53	MASS INST OF TECH	Winget, C. M.	ARC	Wurtman, R. J.	NGR 22-009-627	2384
53	MASS INST OF TECH	Heidelbaugh, N. D.	JSC	Flink, J. M.	NAS 9-12485	2354
53	RICE UNIVERSITY	Taketa, S. T.	ARC	Ward, C. H.	NAS 2-8676	3269
53	ST LOUIS UNIVERSITY	Greenleaf, J. E.	ARC	Van Beaumont, W.	NGR 26-006-039	2580
53	ST LOUIS UNIVERSITY	Anliker, J. E.	ARC	Van Beaumont, W.	NSG 2023	2582
53	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Sawrey, J.	NCA 2-75511	1291
53	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Tseng, R.	NCA 2-75515	1295
53	STANFORD UNIVERSITY	Zill, L. P.	ARC	Pribram, K. H.	NCA 2-45414	1320
53	STANFORD UNIVERSITY	Zill, L. P.	ARC	Atkinson, R. C.	NCA 2-45418	1321
53	STANFORD UNIVERSITY	Zill, L. P.	ARC	Barchas, J. D.	NCA 2-45503	1326
53	STANFORD UNIVERSITY	Zill, L. P.	ARC	Steele, C. R.	NCA 2-45504	1327
53	STANFORD UNIVERSITY	Zill, L. P.	ARC	Mathers, L.	NCA 2-45508	1330
53	STANFORD UNIVERSITY	Zill, L. P.	ARC	Reaven, G. M.	NCA 2-45509	1331
53	STANFORD UNIVERSITY	Zill, L. P.	ARC	Pribram, K. H.	NCA 2-45516	1338
53	STANFORD UNIVERSITY	Sandler, H.	ARC	Beaver, W. L.	NGR 05-020-615	1371
53	STANFORD UNIVERSITY	Sandler, H.	ARC	Angell, J.	NGR 05-020-690	1380
53	STANFORD UNIVERSITY	Rummel, J. A.	JSC	Lederberg, J.	NGR 05-020-632	1373
53	TEXAS TECH UNIV	Day, J. L.	JSC	Portnoy, W. M.	NAS 9-14438	3330
53	TUFTS UNIVERSITY	Jackson, M. M.	JSC	Spodick, D. H.	NGR 22-012-026	2440
53	TULANE UNIVERSITY	Zill, L. P.	ARC	Brizzee, K. R.	NCA 2-00501	2181
53	UNIV CALIF-DAVIS	Winget, C. M.	ARC	Chapman, L. F.	NAS 2-7519	1473
53	UNIV CALIF-DAVIS	Zill, L. P.	ARC	Baldwin, R. L.	NCA 2-80501	1477
53	UNIV CALIF-L ANGELES	Zill, L. P.	ARC	Parlow, A.	NCA 2-90502	1509
53	UNIV CALIF-SAN DIEGO	Billingham, J.	ARC	West, J. B.	NGL 05-009-109	1568
53	UNIV OF HOUSTON	Schneider, H. J.	JSC	Zlatkis, A.	NAS 9-14534	3345
53	UNIV ILLINOIS-URBANA	Mehler, W. R.	ARC	Ades, H. W.	NGR 14-005-221	2018
53	UNIV MICH-ANN ARBOR	Arnoldi, L. B.	HQ-JG	French, J. R., Jr.	NGR 23-005-185	2487
53	UNIV SAN FRANCISCO	Zill, L. P.	ARC	Furst, A.	NCA 2-70504	1619

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53	UNIV OF SANTA CLARA	Zill, L. P.	ARC	Caren, L.	NCA 2-85503	1628
53	U TENNESSEE-MEMPHIS	Kaplan, H.	JSC	Autian, J.	NAS 9-13617	3233
53	UNIV TEX-DENTAL BRCH	Hordinsky, J. R.	JSC	Shannon, I. L.	NAS 9-14560	3429
53	UNIV TEXAS-GALVESTON	Kimzey, S. L.	JSC	Lockhart, L. H.	NAS 9-13102	3431
53	U TEX HEALTH CTR-SA	Hoffler, G. W.	JSC	Earley, L. E.	NGR 44-094-003	3439
53	UNIV OF TORONTO	Halstead, T. W.	HQ-MM	Johnson, W. H.	NSG 7079	3721
53	UNIV OF WASHINGTON	Holton, E. M.	ARC	Baylink, D. J.	NAS 2-8541	3633
53	UPPSALA UNIVERSITY	Mehler, W. R.	ARC	Engstrom, H.	NGR 52-028-004	3730
53	WAYNE STATE UNIV	Young, D. R.	ARC	Sawyer, J. O.	NSG 2008	2516
53	WRIGHT STATE UNIV	Winget, C. M.	ARC	Beljan, J. R.	NAS 2-8578	3054
53	WRIGHT STATE UNIV	Young, D. R.	ARC	Beljan, J. R.	NSG 2034	3055
59	ALABAMA A&M UNIV	Pohly, J. G.	HQ-P	Lee, C. O.	NGR 01-001-003	1000
59	BAYLOR COL OF MED	Leach, C. S.	JSC	Johnson, P. C.	NAS 9-11201	3240
59	BAYLOR COL OF MED	Leach, C. S.	JSC	Di Ferrante, N.	NAS 9-13540	3243
59	BAYLOR COL OF MED	Leach, C. S.	JSC	Suki, W. N.	NAS 9-14715	3254
59	BOSTON UNIVERSITY	Larson, C. A.	HQ-MM	Fulton, G. P.	NGR 22-004-018	2290
59	CALIF INST OF TECH	Chang, S.	ARC	Horowitz, N. H.	NGR 05-002-308	1224
59	CASE WESTERN RESERVE	Fryer, T. B.	ARC	Ko, W. H.	NGR 36-027-053	2982
59	COLLEGE OF WM & MARY	Oberholtzer, J. D.	WFC	Aceto, H., Jr.	NGR 47-006-064	3485
59	COLLEGE OF WM & MARY	Jones, W. L.	HQ-MM	Aceto, H., Jr.	NSG 7073	3491
59	COLORADO STATE UNIV	Tremor, J. W.	ARC	Baker, R.	NAS 2-6615	1663
59	CORNELL UNIVERSITY	Freden, S. C.	GSFC	McNair, A. J.	NAS 5-21844	2789
59	EMORY UNIVERSITY	Anliker, J. E.	ARC	Perachio, A. A.	NGR 11-001-045	1880
59	FLORIDA A&M UNIV	Winget, C. M.	ARC	Walker, C. A.	NSG 2029	1831
59	FLORIDA A&M UNIV	Malone, J. E.	KSC	Harrell, B. E.	NSG 805	1829
59	GEORGE WASHINGTON U	Baker, C. E.	LERC	Schiff, H. I.	NSR 09-010-027	1806
59	GEORGE WASHINGTON U	Hall, L. B.	HQ-SL	Unavailable	NASW 2768	1790
59	HAHNEMANN MED COL	Picciolo, G. L.	GSFC	Gutkunst, R. R.	NAS 5-20865	3096
59	HARVARD UNIVERSITY	Smith, M. C., Jr.	JSC	Hegsted, D. M.	NAS 9-13370	2306
59	HOWARD UNIVERSITY	Carter, C. H.	HQ-P	Deloatch, E. M.	NGT 09-011-051	1817
59	INDIANA U-BLOOMINGTN	Mehler, W. R.	ARC	Gehrels, A. M.	NGL 15-003-077	2033
59	KENTUCKY STATE UNIV	Morrison, J. D.	KSC	Kloek, G.	NSG 801	2139
59	MASS INST OF TECH	Daunton, N. G.	ARC	Young, L. R.	NSG 2032	2418
59	MIAMI UNIVERSITY	Homick, J. L.	JSC	Parker, D. E.	NAS 9-14538	3003
59	NORFOLK STATE COL	Stephens, D. G.	LARC	Colegate, R. L.	NSG 1074	3504
59	OHIO STATE UNIV	Mehler, W. R.	ARC	Lim, D.	NGR 36-008-211	3017
59	OHIO STATE UNIV	Brownstein, H. S.	HQ-MM	Ellingson, H. V.	NSR 36-008-108	3022
59	PENNSYLVANIA STATE U	Homick, J. L.	JSC	Kales, A.	NGR 39-009-204	3129
59	PURDUE UNIVERSITY	Stonesifer, G. R.	GSFC	Bauer, M. E.	NAS 5-20793	2040
59	SAN JOSE STATE UNIV	Zill, L. P.	ARC	West, M. W.	NCA 2-75304	1280
59	SO UNIV-BATON ROUGE	Sandler, H.	ARC	Ray, G.	NSG 2041	2173
59	STANFORD UNIVERSITY	Mehler, W. R.	ARC	Chow, K. L.	NGR 05-020-435	1364
59	STANFORD UNIVERSITY	Leach, C. S.	JSC	Davidson, J. M.	NAS 9-14716	1319
59	STANFORD UNIVERSITY	Young, R. S.	HQ-SL	Bonner, W. A.	NGL 05-020-582	1357
59	ST U NY-UPST MED CTR	Leach, C. S.	JSC	Miller, M.	NAS 9-11846	2916
59	TEXAS A&M UNIVERSITY	Stonesifer, G. R.	GSFC	Rouse, J.	NAS 5-20796	3298
59	TEXAS A&M UNIVERSITY	Smith, M. C., Jr.	JSC	Burns, E. E.	NAS 9-12434	3307
59	UNIV OF ARIZONA	Freden, S. C.	GSFC	McGinnies, W. G.	NAS 5-21812	1108
59	UNIV OF ARIZONA	Kimsey, S. L.	JSC	Bartels, P. H.	NAS 9-14692	1120
59	UNIV CALIF-BERKELEY	Newsom, B. D.	ARC	Pace, N.	NGL 05-003-024	1436
59	UNIV CALIF-BERKELEY	Newsom, B. D.	ARC	Pace, N.	NGR 05-003-470	1453
59	UNIV CALIF-SAN DIEGO	Haines, R. F.	ARC	Harris, J. L.	NGR 05-009-192	1582
59	UNIV CALIF-SAN DIEGO	Anliker, J. E.	ARC	Galambos, R.	NGR 05-009-198	1583
59	UNIV CALIF-SAN FRAN	Zill, L. P.	ARC	Stolckenucus, W.	NGL 05-025-014	1605
59	UNIV COLORADO-BOLDR	Szajna, E. F.	GSFC	Krebs, P.	NAS 5-20948	1697
59	UNIV OF HOUSTON	Smith, M. C., Jr.	JSC	Cox, J. E.	NAS 9-11676	3332
59	UNIV OF HOUSTON	Homick, J. L.	JSC	Pitts, D. G.	NAS 9-14384	3342
59	U MINN-MNPLS-ST PAUL	Smith, M. C., Jr.	JSC	Labuza, T. P.	NAS 9-12560	2532

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FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
59	UNIV MO-COLUMBIA	Pummel, J. A.	JSC	Bryant, P. J.	NAS 9-14369	2587
59	UNIV MO-ROLLA	Quattrone, P. D.	ARC	Mills, J. B.	NGR 26-004-097	2594
59	UNIV NEBRASKA-LINCLN	Smith, M. C., Jr.	JSC	Hartung, T. E.	NAS 9-11045	2616
59	UNIV N CAR-CHPL HILL	Leach, C. S.	JSC	Gitelman, H. J.	NAS 9-14697	2969
59	UNIV ORGEON-HLTH CTR	Ives, R. E.	MSFC	Brooks, D. E.	NAS 8-31386	3084
59	UNIV OF SANTA CLARA	Zill, L. P.	ARC	Pefley, R. K.	NCA 2-85501	1626
59	UNIV TEX-PUB HEALTH	Vitale, J. A.	HQ-P	Rush, M.	NGL 44-084-003	3441
59	UNIV OF VIRGINIA	Wolf, T. D.	FRC	Jacobson, I. D.	NGR 47-005-202	3575
59	UNIV OF WASHINGTON	Smith, M. C., Jr.	JSC	Nelp, W. B.	NAS 9-13029	3635
59	UNIV WISC-MADISON	Zimmerman, R. R.	HQ-KT	Unavailable	NASW 2716	3685
61	CAL STATE U-HAYWARD	Zill, L. P.	ARC	Sieber, J. E.	NCA 2-90401	1264
61	EMORY UNIVERSITY	Winter, D. L.	ARC	Perachio, A. A.	NGR 11-001-012	1878
61	NORTHEASTERN UNIV	Anliker, J. E.	ARC	Terman, M.	NGR 22-011-070	2435
61	UNIV CALIF-DAVIS	Zill, L. P.	ARC	Chapman, L. F.	NCA 2-80504	1480
61	UNIV CALIF-DAVIS	Zill, L. P.	ARC	Bernauer, E. M.	NCA 2-80506	1482
61	UNIV CALIF-SAN DIEGO	Winter, D. L.	ARC	Galambos, R.	NGR 05-009-083	1578
61	UNIV OF KENTUCKY	Oyama, J.	ARC	Lange, K. O.	NGL 18-001-003	2144
61	UNIV OF KENTUCKY	Anliker, J. E.	ARC	McCoy, D. F.	NGR 18-001-068	2147
61	UNIV MICH-ANN ARBOR	Simmonds, R. C.	ARC	Von Baumgarten A, R. J.	NAS 2-6057	2461
62	COLUMBIA UNIVERSITY	Shepherd, W. T.	LARC	Borsky, P. N.	NAS 1-13663	2755
62	COLUMBIA UNIVERSITY	Shepherd, W. T.	LARC	Borsky, P. N.	NGL 33-008-118	2766
62	JOHNS HOPKINS UNIV	Patton, R. M.	ARC	Brady, J. V.	NGR 21-001-111	2207
69	COLUMBIA UNIVERSITY	Gunn, W. J.	LARC	Galanter, E.	NSG 1115	2779
69	COLUMBIA UNIVERSITY	Powell, C. A.	LARC	Borsky, P. N.	NSG 1164	2780
69	HAMPTON INSTITUTE	Catherines, J. J.	LARC	Duncan, N. C.	NSG 1011	3497
69	HAMPTON INSTITUTE	Pohly, J. G.	HQ-P	Handy, J. W.	NGR 47-020-004	3493
69	MASS INST OF TECH	Daunton, N. G.	ARC	Teuber, H. L.	NGL 22-009-308	2366
69	MEMPHIS ST UNIV	Shepherd, W. T.	LARC	Fletcher, J. L.	NGR 43-008-008	3201
69	NO CAROLINA STATE U	Gunn, W. J.	LARC	Levere, T. E.	NGL 34-002-095	2948
69	OLD DOMINION UNIV	Mixson, J. S.	LARC	Kirby, R. H.	NGR 47-003-083	3521
69	OLD DOMINION UNIV	Leatherwood, J. D.	LARC	Kirby, R. H.	NSG 1042	3531
69	OLD DOMINION UNIV	Shepherd, W. T.	LARC	Alluisi, E. A.	NSG 1092	3539
69	SAN JOSE STATE UNIV	Stewart, J. D.	ARC	Clark, W. B.	NGL 05-046-002	1300
69	UNIV ALA-HUNTSVILLE	Kubokawa, C. C.	ARC	Rogers, J. G.	NSG 2058	1072
69	UNIV CALIF-BERKELEY	Zill, L. P.	ARC	Haftner, E. R.	NCA 2-50508	1431
69	UNIV OF FLORIDA	Anliker, J. E.	ARC	Webb, W. B.	NGR 10-005-057	1854
69	UNIV OF ROCHESTER	Gainer, P. A.	LARC	Brown, J. L.	NSG 1211	2925
69	UNIV TEXAS-AUSTIN	Tanner, T. A.	ARC	Helmreich, R. L.	NSG 2065	3403
69	UNIV TEXAS-AUSTIN	Fedderson, W. E.	JSC	Helmreich, A. L.	NGR 44-012-224	3390
69	UNIV TEXAS-GALVESTON	Reschke, M. F.	JSC	Correia, M. J.	NAS 9-14641	3433
69	UNIV OF UTAH	Lawton, B. W.	LARC	Shepherd, K. P.	NSG 1160	3466
72	AUBURN UNIV-AUBURN	McKannan, E. C.	MSFC	Vachon, R. I.	NAS 8-29881	1020
72	COLUMBIA UNIVERSITY	Morris, J. D.	HQ-P	Ginzberg, E.	NGR 33-008-168	2769
73	GEORGE WASHINGTON U	Rosenberg, J. D.	HQ-ET	Marney, M. C.	NAS 5-20843	1788
73	JOHNS HOPKINS UNIV	Emme, E. M.	HQ-AD	Berthel, J. H.	NSR 21-001-077	2216
73	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Braun, D. E.	NCA 2-75401	1282
73	UNIV ALA-HUNTSVILLE	Sorensen, V. C.	MSFC	Beltz, J. S.	NAS 8-26055	1042
73	UNIV OF DAYTON	Hein, G. F.	LERC	Engler, N. A.	NAS 3-19699	3042
73	UNIV OF FLORIDA	Schnoor, R. H.	KSC	Benson, C. D.	NAS10-7791	1842
73	UNIV OF HOUSTON	Wright, M. D.	HQ-AC	Unavailable	NASW 2691	3349
75	CITY COLLEGE OF N Y	Ermst, H. M.	HQ-ET	Schilling, D. L.	NSG 7144	2752
75	GEORGE WASHINGTON U	Wright, M. D.	HQ-AC	Unavailable	NSG 7145	1805
75	NEW YORK UNIVERSITY	Schnetzler, C. C.	GSFC	Bottino, M. L.	NAS 5-20961	2835
75	STANFORD UNIVERSITY	Barnett, R. M.	ARC	Pederson, C. A.	NAS 2-8898	1310
75	UNIV CALIF-BERKELEY	Kenyon, G. C.	ARC	Horonjeff, R.	NAS 2-7879	1407
75	UNIV CALIF-BERKELEY	Zill, L. P.	ARC	Buxbaum, R. M.	NCA 2-50502	1428
75	UNIV OF DENVER	Ault, L. A.	HQ-KT	Unavailable	NASW 2607	1732
75	UNIV OF NEW MEXICO	Morris, J. D.	HQ-P	Rosenthal, A. H.	NGL 32-004-042	2726

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FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
75	UNIV OF SANTA CLARA	Zill, L. P.	ARC	Bruno, A.	NCA 2-85508	1631
75	UNIV OF SANTA CLARA	Zill, L. P.	ARC	Alexander, G. J.	NCA 2-85510	1633
75	W VA COL GRAD STUDY	Rollins, R. H.	HQ-RX	Cobb, W. E.	NSG 7089	3658
76	XAVIER UNIV-LA	Pohly, J. G.	HQ-P	Fulwiler, J. H.	NGR 19-007-002	2188
79	GEORGE WASHINGTON U	Morris, J. D.	HQ-P	Mayo, A. L.	NGL 09-010-030	1791
79	NORFOLK STATE COL	Conner, D. W.	LARC	Ficht, J. C.	NSG 1145	3505
79	NORTHWESTERN UNIV	Morris, J. D.	HQ-P	Radnor, M.	NGL 14-007-058	1962
79	SOUTHERN METHODIST U	Tanner, T. A.	ARC	Brown, J.	NSG 2006	3293
79	UNIV CALIF-BERKELEY	Tanner, T. A.	ARC	La Porte, T. R.	NGR 05-003-471	1454
79	UNIV OF HOUSTON	Sullivan, L. J.	JSC	Jain, A. K.	NAS 9-12650	3334
99	BENNETT COLLEGE-NC	Pohly, J. G.	HQ-P	Sayles, J. H.	NGT 34-017-001	2929
99	BROWN UNIVERSITY	Williams, T. S., Jr.	LARC	Mutch, T. A.	NAS 1-9680	3168
99	CHICAGO STATE UNIV	Young, S. G.	LERC	Treptow, R. S.	NSG 3030	1954
99	CAL ST COL-SONOMA	Zill, L. P.	ARC	Anderson, T.	NCA 2-20601	1243
99	CASE WESTERN RESERVE	Smith, R. E.	LARC	Lynch, W. C.	NSG 1069	2986
99	COLLEGE OF WM & MARY	Martin, D. J.	LARC	Aceto, H., Jr.	NAS 1-11958	3481
99	COLLEGE OF WM & MARY	Anderson, A. F.	LARC	Rublein, G. T.	NGL 47-006-058	3483
99	COLLEGE OF WM & MARY	Redding, E. R.	HQ-P	Sher, A.	NGL 47-006-055	3482
99	COLUMBIA UNIVERSITY	Guntharp, P. A.	GSFC	Fountain, T. D.	NAS 5-22311	2757
99	CORNELL UNIVERSITY	Williams, T. S., Jr.	LARC	Sagan, C. E.	NAS 1-9683	2785
99	CORNELL UNIVERSITY	Allen, R. E.	MSFC	Rubin, A. L.	NAS 8-31513	2791
99	GEORGE WASHINGTON U	Straeter, T. A.	LARC	Maurer, W. D.	NSG 1170	1803
99	GEORGIA INST OF TECH	Dibattista, J. D.	LARC	Sheppard, A. P.	NSG 1200	1914
99	GEORGIA INST OF TECH	Kerr, J. H.	MSFC	Shackelford, R. G.	NAS 8-30534	1894
99	GOUCHER COLLEGE	Pohly, J. G.	HQ-P	Billet, J.	NGT 21-123-001	2200
99	INDIANA U-BLOOMINGTN	Holley, H. L.	HQ-KT	Shriner, H.	NASW 2353	2028
99	INDIANA U-BLOOMINGTN	Holley, H. L.	HQ-KT	Shriner, H.	NASW 2467	2029
99	INDIANA U-BLOOMINGTN	Holley, H. L.	HQ-KT	Shriner, H.	NASW 2714	2030
99	MASS INST OF TECH	Clark, T. A.	GSFC	Shapiro, I. I.	NGR 22-009-839	2409
99	MASS INST OF TECH	Williams, T. S., Jr.	LARC	Shapiro, I. I.	NAS 1-9702	2330
99	MASS INST OF TECH	Redding, E. R.	HQ-P	Harrington, J. V.	NGL 22-009-019	2361
99	MASS INST OF TECH	Redding, E. R.	HQ-P	McCarthy, J. F., Jr.	NGL 22-009-638	2370
99	MASS INST OF TECH	Enders, J. H.	HQ-RO	Simpon, R.	NASW 2412	2355
99	MISSISSIPPI STATE U	Forbes, C. D.	JSC	Bouchillon, C. W.	NAS 9-13363	2567
99	MOREHOUSE COLLEGE	Pohly, J. G.	HQ-P	Gayles, J. N.	NGT 11-008-004	1926
99	MORGAN STATE COLLEGE	Shorter, C. W.	GSFC	Collagan, R. B.	NGR 21-025-011	2217
99	NM HIGHLANDS UNIV	Pohly, J. G.	HQ-P	Nerick, H.	NGT 32-010-001	2693
99	NEW MEX ST U-LAS CR	Van Ess, J. C.	ARC	Lawrence, D. H.	NAS 2-8496	2700
99	NEW YORK UNIVERSITY	Jones, W. L.	LARC	Pierson, W. J., Jr.	NAS 1-10090	2832
99	NORTHWESTERN UNIV	Myers, B. C.	HQ-D	Radnor, M.	NGR 14-007-136	1969
99	NORTHWESTERN UNIV	Morris, J. D.	HQ-P	Rubenstein, A. H.	NGL 14-007-062	1963
99	OHIO STATE UNIV	Dibattista, J. D.	LARC	Nerem, R. M.	NSG 1212	3020
99	OKLAHOMA STATE UNIV	Miller, S. A.	ARC	Wiggins, K. E.	NAS 2-7273	3058
99	OKLAHOMA STATE UNIV	Collin, E. E.	HQ-FE	Wiggins, K. E.	NASW-1964	3059
99	OLD DOMINION UNIV	Martin, D. J.	LARC	Ousterhout, D. S.	NAS 1-9434	3506
99	OLD DOMINION UNIV	Tynan, C. I., Jr.	LARC	Goglia, G. L.	NSG 1186	3556
99	PENNSYLVANIA STATE U	Carter, C. H.	HQ-P	Reethof, G.	NGT 39-009-141	3133
99	PRINCETON UNIVERSITY	Johnson, R. D.	ARC	O'Neill, G. K.	NSG 2062	2682
99	PRINCETON UNIVERSITY	Mullin, J. S.	HQ-RX	Graham, D.	NSG 7131	2687
99	PURDUE UNIVERSITY	Freden, S. C.	GSFC	Bouchillon, C. W.	NAS 5-21880	2044
99	SAN FRAN STATE UNIV	Zill, L. P.	ARC	Eisenberg, L.	NCA 2-60501	1274
99	SAN FRAN STATE UNIV	Middaugh, C. W.	ARC	Duckworth, E. L.	NSG 2033	1279
99	SAN JOSE STATE UNIV	Zill, L. P.	ARC	Monge, P. R.	NCA 2-75512	1292
99	SHAW UNIVERSITY	Dixon, J. T.	HQ-U	Unavailable	NASW 2793	2966
99	SOUTHEASTN STATE COL	Holley, H. L.	HQ-KT	Gold, C. H.	NASW 2379	3060
99	SOUTHEASTN STATE COL	Holley, H. L.	HQ-KT	Gold, H.	NASW 2512	3061
99	SOUTHEASTN STATE COL	Holley, H. L.	HQ-KT	Unavailable	NASW 2629	3062
99	SOUTHEASTN STATE COL	Pohly, J. G.	HQ-P	Robinson, J. L.	NGT 37-004-010	3063

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FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
99	SPELMAN COLLEGE	Pohly, J. G.	HQ-P	McBay, S. M.	NGT 11-013-001	1933
99	STANFORD UNIVERSITY	Zill, L. P.	ARC	Pederson, C. A.	NCA 2-45426	1323
99	STANFORD UNIVERSITY	Williams, T. S., Jr.	LARC	Levinthal, E. C.	NAS 1-9682	1305
99	UNIV ALA-HUNTSVILLE	Decher, R.	MSFC	Hendricks, J. B.	NAS 8-29316	1048
99	UNIV ALA-HUNTSVILLE	Brown, R. L.	MSFC	Engle, H. A.	NAS 8-30737	1058
99	UNIV ALA-HUNTSVILLE	Redding, E. R.	HQ-P	Rush, J. E.	NGL 01-008-001	1070
99	UNIV CALIF-BERKELEY	Redding, E. R.	HQ-P	Anderson, K. A.	NGL 05-003-497	1442
99	UNIV CALIF-L ANGELES	Redding, E. R.	HQ-P	Libby, W. F.	NGL 05-007-003	1512
99	UNIV OF CHICAGO	Redding, E. R.	HQ-P	Simpson, J. A.	NGL 14-001-258	1989
99	UNIV OF CHILE	Lafleur, W.	GSFC	Danyau, C. R.	NAS 5-1925	3723
99	UNIV OF CONNECTICUT	Holley, H. L.	HQ-KT	Wilde, D.	NASW 2516	1745
99	UNIV OF DENVER	Ault, L. A.	HQ-KT	Freeman, J. E.	NASW 2766	1733
99	UNIV OF GEORGIA	Holley, H. L.	HQ-KT	Carmon, J. L.	NASW 2401	1935
99	UNIV OF GEORGIA	Harrison, J. O.	HQ-KT	Unavailable	NASW 2658	1936
99	UNIV OF HAWAII	Smith, M. C., Jr.	ARC	Kuo, F. F.	NAS 2-8590	1938
99	UNIV OF KANSAS	Schroeder, L. C.	LARC	Moore, R. K.	NAS 1-10048	2106
99	UNIV MARYLAND-COL PK	Fitzmaurice, M. W.	GSFC	Alley, C. O.	NSG 5062	2281
99	UNIV MD-EASTRN SHORE	Floyd, J. C.	WFC	Unavailable	NAS 6-2595	2285
99	U MINN-MNPLS-ST PAUL	Williams, T. S., Jr.	LARC	Nier, A. O.	NAS 1-9697	2519
99	U MINN-MNPLS-ST PAUL	Carter, C. H.	HQ-P	Anderson, G. W.	NGT 24-005-078	2546
99	UNIV OF NEW MEXICO	Holley, H. L.	HQ-KT	Shinnick, W. A.	NASW 2399	2716
99	UNIV OF NEW MEXICO	Bivins, R. G.	HQ-KT	Unavailable	NASW 2633	2717
99	UNIV OF PITTSBURGH	Holley, H. L.	HQ-KT	Holley, E.	NASW 2425	3151
99	UNIV OF PITTSBURGH	Holley, H. L.	HQ-KT	Unavailable	NASW 2674	3152
99	UNIV OF PITTSBURGH	Holley, H. L.	HQ-KT	Howie, E.	NSR 39-011-064	3167
99	UNIV OF SANTA CLARA	Walsh, L. J.	ARC	Bruno, A. V.	NSG 2036	1639
99	UNIV OF SOUTHERN CAL	Holley, H. L.	HQ-KT	Unavailable	NASW 2592	1649
99	UNIV OF SOUTHERN CAL	Holley, H. L.	HQ-KT	Unavailable	NASW 2771	1650
99	UNIV TEXAS-DALLAS	Williams, T. S., Jr.	LARC	Hanson, W. B.	NAS 1-9699	3407
99	UNIV TEXAS-DALLAS	Redding, E. R.	HQ-P	Johnson, F. S.	NGL 44-004-130	3416
99	UNIV OF VIRGINIA	Martin, D. J.	LARC	Barnes, D. W.	NAS 1-12754	3562
99	WASHINGTON UNIVERSTY	Quann, J. J.	GSFC	Morgan, R. P.	NAS 5-20680	2598
99	WASHINGTON UNIVERSTY	Redding, E. R.	HQ-P	Morgan, R. P.	NGL 26-008-054	2601

**NASA'S UNIVERSITY PROGRAM
APPENDIX C
CROSS INDEX BY FIRST TECHNICAL OFFICER LOCATION**

Technical Officers are usually located at the NASA installation funding a particular grant or contract. There may be a second technical officer, shown in the citation, at the same or a different installation. Abbreviations used for locations are: ARC, Ames Research Center; FRC, Flight Research Center; GSFC, Goddard Space Flight Center; KSC, Kennedy Space Center, JSC, Johnson Space Center; LARC, Langley Research Center; LERC, Lewis Research Center; MSFC, Marshall Space Flight Center; National Space Technology Laboratories, NSTL; WFC, Wallops Flight Center and HQ, Headquarters. The HQ designator carries suffixed letters identifying individual Headquarters offices; and explanation of these identifiers and full addresses for all installations may be found in the prefatory pages. The key for the "Field Code" column is in Appendix B.

TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
ARC	Haines, R. F.	BAYLOR COL OF MED	NGR 44-003-057	Decker, T. A.	51	3256
ARC	Danellis, J. V.	BISHOP COLLEGE	NGR 44-032-013	Kutsky, R. J.	51	3257
ARC	Haughney, L. C.	BOSTON COLLEGE	NGR 22-003-027	Eather, R. H.	31	2289
ARC	Miquel, J.	BOWLING GRN STATE U	NGR 36-017-004	Oster, I. I.	51	2971
ARC	Hall, C. F.	BRIGHAM YOUNG UNIV	NAS 2-7358	Jones, D. E.	13	3443
ARC	Dyal, P.	BRIGHAM YOUNG UNIV	NGR 45-001-040	Jones, D. E.	13	3447
ARC	Howe, J. T.	BROWN UNIVERSITY	NGL 40-002-059	Mason, E. A.	12	3170
ARC	Hall, C. F.	CALIF INST OF TECH	NAS 2-6556	Munch, G.	11	1185
ARC	Olson, L. E.	CALIF INST OF TECH	NGL 05-002-229	Coles, D. E.	41	1208
ARC	Cameron, R. M.	CALIF INST OF TECH	NGR 05-002-281	Werner, M. W.	11	1217
ARC	Chang, S.	CALIF INST OF TECH	NGR 05-002-308	Horowitz, N. H.	59	1224
ARC	Zill, L. P.	CAL ST COL-SONOMA	NCA 2-20601	Anderson, T.	99	1243
ARC	Zill, L. P.	CAL STATE U-CHICO	NCA 2-10501	Sours, C. F.	47	1244
ARC	Zill, L. P.	CAL STATE U-CHICO	NCA 2-10502	Huntsfinger, R.	41	1245
ARC	Zill, L. P.	CAL STATE U-CHICO	NCA 2-10504	Sours, C. F.	41	1246
ARC	Boese, R. W.	CAL STATE U-CHICO	NGL 05-076-001	Regas, J. L.	31	1247
ARC	Zill, L. P.	CAL STATE U-FULLERTN	NCA 2-53501	Esser, A. F.	51	1248
ARC	Zill, L. P.	CAL STATE U-FULLERTN	NCA 2-53601	Esser, A. F.	51	1249
ARC	Zill, L. P.	CAL STATE U-HAYWARD	NCA 2-90401	Sieber, J. E.	61	1264
ARC	Zill, L. P.	CAL STATE U-HAYWARD	NCA 2-90501	Warnke, D. E.	32	1265
ARC	Carr, L. W.	CAL STATE U-LG BEACH	NAS 1-13656	Cebeci, T.	41	1253
ARC	Zill, L. P.	CAL STATE U-L ANGLES	NCA 2-85502	Goldwhite, H.	11	1254
ARC	Zill, L. P.	CAL STATE U-SACRAMEN	NCA 2-55501	Happ, W. H.	44	1257
ARC	Zill, L. P.	CAL STATE U-SACRAMEN	NCA 2-55502	Luther, L. C.	41	1258
ARC	Quattrone, P. D.	CASE WESTERN RESERVE	NGR 36-027-050	Yeager, E.	12	2979
ARC	Quattrone, P. D.	CASE WESTERN RESERVE	NGR 36-027-052	Yeager, E.	12	2981
ARC	Fryer, T. B.	CASE WESTERN RESERVE	NGR 36-027-053	Ko, W. H.	59	2982
ARC	Winget, C. M.	CENTRAL ST UNIV-OHIO	NSG 2074	Nduaguba, J. C.	51	2996
ARC	Pollack, J. B.	CLARK COLLEGE	NGR 11-010-001	Walker, G. H.	31	1876
ARC	Lerner, N. R.	CLARKSON COL OF TECH	NSG 2059	Jellinek, H. H.	12	2754
ARC	Tremor, J. W.	COLORADO STATE UNIV	NAS 2-6615	Baker, R.	59	1663
ARC	Zill, L. P.	COLORADO STATE UNIV	NCA 2-65502	Sandborn, V. A.	41	1671
ARC	Zill, L. P.	COLORADO STATE UNIV	NCA 2-65503	She, C. Y.	13	1672
ARC	Holton, E. M.	COLORADO STATE UNIV	NGR 06-002-075	Jordan, J. P.	51	1674
ARC	Debs, R. J.	COLORADO STATE UNIV	NGR 06-002-127	Loehrke, R. I.	46	1679
ARC	Rositano, S. A.	COLORADO STATE UNIV	NSG 2009	Histand, M. B.	45	1686
ARC	Tremor, J. W.	CORNELL UNIVERSITY	NAS 2-7846	Steward, F. C.	51	2786
ARC	Erickson, E. F.	CORNELL UNIVERSITY	NAS 2-8706	Houck, J. R.	11	2787
ARC	Presley, L. L.	CORNELL UNIVERSITY	NGL 33-010-057	Wehausen, J. V.	41	2797
ARC	Cameron, R. M.	CORNELL UNIVERSITY	NGR 33-010-081	Houck, J. R.	11	2803

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
ARC	Cameron, R. M.	CORNELL UNIVERSITY	NGR 33-010-146	Harwit, M. O.	11	2809
ARC	Sandler, H.	CORNELL UNIVERSITY	NGR 33-010-179	Reis, D. J.	53	2813
ARC	Cameron, R. M.	CORNELL UNIVERSITY	NGR 33-010-182	Houck, J. R.	11	2814
ARC	Nelson, H. G.	CORNELL UNIVERSITY	NSG 2078	Johnson, H. H.	47	2820
ARC	Harmaker, W. E.	DUKE UNIVERSITY	NAS 2-7655	Vogel, F. S.	53	2931
ARC	Holton, E. M.	EMORY UNIVERSITY	NGL 11-001-009	Popovic, V. P.	51	1877
ARC	Winter, D. L.	EMORY UNIVERSITY	NGR 11-001-012	Perachio, A. A.	61	1878
ARC	Winter, D. L.	EMORY UNIVERSITY	NGR 11-001-016	Bourne, G. H.	51	1879
ARC	Anliker, J. E.	EMORY UNIVERSITY	NGR 11-001-045	Perachio, A. A.	59	1880
ARC	Winget, C. M.	FLORIDA A&M UNIV	NSG 2029	Walker, C. A.	59	1831
ARC	Reynolds, R. T.	FOOTHILL COLLEGE	NSG 2001	Kellman, S. A.	11	1261
ARC	Quattrone, P. D.	GEORGIA INST OF TECH	NSG 2004	Orr, C.	19	1915
ARC	Kirkpatrick, J. P.	GEORGIA INST OF TECH	NSG 2054	Colwell, G. T.	46	1916
ARC	Young, D. R.	HARVARD UNIVERSITY	NGR 22-007-256	Tashjian, A. H., Jr.	52	2315
ARC	Poppoff, I. G.	HARVARD UNIVERSITY	NSG 2031	McElroy, M. B.	31	2323
ARC	Bradski, M.	HARVARD UNIVERSITY	NSG 2081	Vaiana, G. S.	11	2324
ARC	Orloff, K.	HARVEY MUDD COLLEGE	NAS 2-8921	Woodson, T. T.	41	1262
ARC	Orloff, K.	HARVEY MUDD COLLEGE	NAS 2-8925	Woodson, T. T.	41	1263
ARC	Sandler, H.	HOWARD UNIVERSITY	NGL 09-011-017	Hawthorne, E. W.	53	1809
ARC	Zill, L. P.	INDIANA U-BLOOMINGTN	NCA 2-35501	Hayes, J.	12	2031
ARC	Mehler, W. R.	INDIANA U-BLOOMINGTN	NGL 15-003-077	Gehrels, A. M.	59	2033
ARC	Weisoman, N. W.	INDIANA U-BLOOMINGTN	NGR 15-003-007	Neff, W. D.	51	2035
ARC	Haymaker, W. E.	INDIANA U-INDIANAPLS	NAS 2-7927	Zeman, W.	51	2038
ARC	Zill, L. P.	IOWA STATE UNIV	NCA 2-40405	Grossman, A. S.	19	2073
ARC	Zill, L. P.	IOWA STATE UNIV	NCA 2-40406	Cook, W. J.	41	2074
ARC	Zill, L. P.	IOWA STATE UNIV	NCA 2-40501	Iverson, J. D.	32	2075
ARC	Zill, L. P.	IOWA STATE UNIV	NCA 2-40502	Herget, C. J.	21	2076
ARC	Zill, L. P.	IOWA STATE UNIV	NCA 2-40503	Anderson, D. A.	41	2077
ARC	Zill, L. P.	IOWA STATE UNIV	NCA 2-40504	Grossman, A. S.	31	2078
ARC	Zill, L. P.	IOWA STATE UNIV	NCA 2-40505	Anderson, D. A.	41	2079
ARC	Zill, L. P.	IOWA STATE UNIV	NCA 2-40506	Cook W. J.	41	2080
ARC	Zill, L. P.	IOWA STATE UNIV	NCA 2-40601	Iversen, J. D.	32	2081
ARC	Rakich, J. V.	IOWA STATE UNIV	NGR 16-002-038	Tannehill, J. C.	41	2082
ARC	Rosow, V. J.	IOWA STATE UNIV	NSG 2040	Wilson, L. N.	41	2083
ARC	Chapman, G. T.	IOWA STATE UNIV	NSG 2091	James, W. D.	41	2084
ARC	Zill, L. P.	JERSEY CITY ST COL	NCA 2-50501	Bailey, W. L.	11	2644
ARC	Patton, R. M.	JOHNS HOPKINS UNIV	NGR 21-001-111	Brady, J. V.	62	2207
ARC	Zill, L. P.	KANSAS STATE UNIV	NCA 2-63501	Ahmed, N.	45	2104
ARC	Quattrone, P. D.	KENT STATE UNIV	NSG 2013	Madex, R.	12	3002
ARC	Zill, L. P.	LEHIGH UNIVERSITY	NCA 2-80501	Wei, R. P.	47	3098
ARC	Rabbott, J. P., Jr.	MASS INST OF TECH	NAS 2-7262	Ham, N. D.	41	2332
ARC	Rabbott, J. P., Jr.	MASS INST OF TECH	NAS 2-7620	Faulkner, H. B.	41	2333
ARC	Williams, L. J.	MASS INST OF TECH	NAS 2-8157	Simpson, R. W.	41	2334
ARC	Doolin, B. F.	MASS INST OF TECH	NGL 22-009-124	Athans, M.	49	2363
ARC	Daunton, N. G.	MASS INST OF TECH	NGL 22-009-308	Teuber, H. L.	69	2366
ARC	Winget, C. M.	MASS INST OF TECH	NGR 22-009-627	Wurtman, R. J.	53	2384
ARC	Cameron, R. M.	MASS INST OF TECH	NGR 22-009-718	McCord, T. B.	11	2389
ARC	Quattrone, P. D.	MASS INST OF TECH	NGR 22-009-723	Reid, R. C.	12	2390
ARC	Daunton, N. G.	MASS INST OF TECH	NGR 22-009-726	Worden, F. G.	51	2391
ARC	Wempe, T. E.	MASS INST OF TECH	NGR 22-009-733	Curry, R. E.	41	2394
ARC	Quattrone, P. D.	MASS INST OF TECH	NGR 22-009-766	Steinfeld, J. I.	12	2397
ARC	Daunton, N. G.	MASS INST OF TECH	NGR 22-009-798	Bizzi, E.	51	2403
ARC	Quattrone, P. D.	MASS INST OF TECH	NGR 22-009-799	Modell, M.	12	2404
ARC	Daunton, N. G.	MASS INST OF TECH	NGR 22-009-826	Nauta, W. J.	51	2408
ARC	Reynolds, R. T.	MASS INST OF TECH	NSG 2010	Prinn, R. G.	31	2416
ARC	Masey, A. C.	MASS INST OF TECH	NSG 2024	Simpson, R. W.	41	2417
ARC	Daunton, N. G.	MASS INST OF TECH	NSG 2032	Young, L. R.	59	2418
ARC	Rabbott, J. P., Jr.	MASS INST OF TECH	NSG 2044	Whittaker, H. P.	41	2419

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ARC	Doolin, B. F.	MASS INST OF TECH	NSG 2076	Athans, M.	49	2420
ARC	Van Ess, J. C.	NEW MEX ST U-LAS CR	NAS 2-8496	Lawrence, D. H.	99	2700
ARC	Hall, C. F.	NEW YORK UNIVERSITY	NAS 2-7963	Weinberg, J.	11	2834
ARC	Hicks, R. M.	NEW YORK UNIVERSITY	NGR 33-016-201	Garabedian, P. R.	41	2845
ARC	Williams, D. P.	NO CAROLINA STATE U	NGR 34-002-175	Isaacson, E.	47	2951
ARC	Anliker, J. E.	NORTHEASTERN UNIV	NGR 22-011-070	Terman, M.	61	2435
ARC	Cassen, P. M.	OHIO STATE UNIV	NGR 36-008-205	Kulacki, F. A.	19	3016
ARC	Mehler, W. R.	OHIO STATE UNIV	NGR 36-008-211	Lim, D.	59	3017
ARC	Miller, S. A.	OKLAHOMA STATE UNIV	NAS 2-7273	Wiggins, K. E.	99	3058
ARC	Schmitz, F. H.	POLY INST OF NY	NAS 2-8399	Isom, M. P.	41	2853
ARC	Zill, L. P.	POLY INST OF NY	NCA 2-95501	Pearce, E. M.	12	2854
ARC	Fohlen, G. M.	POLY INST OF NY	NSG 2060	Morawetz, H. E.	12	2862
ARC	Cameron, R. M.	POMONA COLLEGE	NSG 2011	Webb, W.	11	1267
ARC	Franklin, J. A.	PRINCETON UNIVERSITY	NAS 2-7350	Seckel, E.	41	2647
ARC	Morse, H. A.	PRINCETON UNIVERSITY	NAS 2-7615	Dowell, E. H.	41	2648
ARC	Gaspers, P. A., Jr.	PRINCETON UNIVERSITY	NGR 31-001-197	Dowell, E. H.	41	2664
ARC	Cicolani, L. S.	PRINCETON UNIVERSITY	NGR 31-001-277	Dukes, T. A.	41	2672
ARC	Mascy, A. C.	PRINCETON UNIVERSITY	NSG 2037	Fels, M. F.	39	2680
ARC	Rabbott, J. P., Jr.	PRINCETON UNIVERSITY	NSG 2045	Curtiss, H. C., Jr.	41	2681
ARC	Johnson, R. D.	PRINCETON UNIVERSITY	NSG 2062	O'Neill, G. K.	99	2682
ARC	Zill, L. P.	PURDUE UNIVERSITY	NCA 2-05501	Smith, C. R.	41	2049
ARC	Gregory, T. J.	PURDUE UNIVERSITY	NGR 15-005-180	Garrett, R. E.	49	2060
ARC	Grant, T. L.	RENSSELAER POLY-NY	NGR 33-018-188	Modestino, J. W.	45	2873
ARC	Taketa, S. T.	RICE UNIVERSITY	NAS 2-8676	Ward, C. H.	53	3269
ARC	Greenleaf, J. E.	ST LOUIS UNIVERSITY	NGR 26-006-039	Van Beaumont, W.	53	2580
ARC	Anliker, J. E.	ST LOUIS UNIVERSITY	NSG 2023	Van Beaumont, W.	53	2582
ARC	Zill, L. P.	SAN FRAN STATE UNIV	NCA 2-60410	Orenberg, J. B.	12	1272
ARC	Zill, L. P.	SAN FRAN STATE UNIV	NCA 2-60411	Catalano, G. T.	45	1273
ARC	Zill, L. P.	SAN FRAN STATE UNIV	NCA 2-60501	Eisenberg, L.	99	1274
ARC	Zill, L. P.	SAN FRAN STATE UNIV	NCA 2-60502	Shaw, S. J.	21	1275
ARC	Zill, L. P.	SAN FRAN STATE UNIV	NCA 2-60504	Hagar, G.	11	1276
ARC	Zill, L. P.	SAN FRAN STATE UNIV	NCA 2-60505	Plachy, W. Z.	13	1277
ARC	Zill, L. P.	SAN FRAN STATE UNIV	NCA 2-60506	Auleb, L.	51	1278
ARC	Middaugh, C. W.	SAN FRAN STATE UNIV	NSG 2033	Duckworth, E. L.	99	1279
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75304	West, M. W.	59	1280
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75317	Holnstrom, F.	47	1281
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75401	Braun, D. E.	73	1282
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75409	Neptune, J.	12	1283
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75410	Neptune, J.	41	1284
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75411	Sharfstein, H.	41	1285
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75413	Tucker, A. B.	41	1286
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75414	Maddock, M.	19	1287
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75505	Myronuk, D. J.	41	1288
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75506	Haight, R. D.	51	1289
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75509	Riegel, C. A.	31	1290
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75511	Sawrey, J.	53	1291
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75512	Monge, P. R.	99	1292
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75513	Leonard, T. E.	41	1293
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75514	Anderson, D.	13	1294
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75515	Tseng, R.	53	1295
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75518	Ellesen, R.	31	1296
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75520	Miller, A.	41	1297
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75521	Young, W.	51	1298
ARC	Zill, L. P.	SAN JOSE STATE UNIV	NCA 2-75601	Myronuk, D. J.	49	1299
ARC	Stewart, J. D.	SAN JOSE STATE UNIV	NGL 05-046-002	Clark, W. B.	69	1300
ARC	Wydeven, T. J.	SAN JOSE STATE UNIV	NGR 05-046-011	Spitze, L. A.	12	1301
ARC	Arvesen, J. C.	SAN JOSE STATE UNIV	NGR 05-046-015	Weaver, E. C.	39	1302
ARC	Reynolds, R. T.	SAN JOSE STATE UNIV	NSG 2047	Riegel, C.	11	1303

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ARC	Wydeven, T. J.	SAN JOSE STATE UNIV	NSG 2066	Spitze, L. A.	12	1304
ARC	Hruby, R. J.	STHN COLORADO ST COL	NSG 2048	Jenkins, R. B.	41	1691
ARC	Tanner, T. A.	SOUTHERN METHODIST U	NSG 2006	Brown, J.	79	3293
ARC	Sandler, H.	SO UNIV-BATON ROUGE	NSG 2041	Ray, G.	59	2173
ARC	Miquel, J.	STANFORD UNIVERSITY	NAS 2-6706	Bensch, K. G.	51	1308
ARC	Kenyon, G. C.	STANFORD UNIVERSITY	NAS 2-7199	Shevill, R. S.	49	1309
ARC	Barnett, R. M.	STANFORD UNIVERSITY	NAS 2-8898	Pederson, C. A.	75	1310
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45414	Pribram, K. H.	53	1320
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45418	Atkinson, R. C.	53	1321
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45425	Dutton, R. M.	45	1322
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45426	Pederson, C. A.	99	1323
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45501	Leckie, J. O.	39	1324
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45502	Bershader, D.	13	1325
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45503	Barchas, J. D.	53	1326
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45504	Steele, C. R.	53	1327
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45506	Loew, G. B.	12	1328
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45507	Baganoff, D.	49	1329
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45508	Mathers, L.	53	1330
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45509	Reaven, G. M.	53	1331
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45510	Croft, T. A.	42	1332
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45511	Pound, G. M.	12	1333
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45512	Karamcheti, K.	41	1334
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45513	Peterson, A. M.	45	1335
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45514	Ritson, D.	11	1336
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45515	Bredt, T. H.	21	1337
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45516	Pribram, K. H.	53	1338
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45517	Mitchner, M.	31	1339
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45518	Powell, J. D.	45	1340
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45519	Petrosian, J.	21	1341
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45520	Olinger, J.	21	1342
ARC	Zill, L. P.	STANFORD UNIVERSITY	NCA 2-45601	Debra, D. B.	46	1343
ARC	Doolin, B. F.	STANFORD UNIVERSITY	NGL 05-020-007	Bryson, A. E.	49	1344
ARC	Sandler, H.	STANFORD UNIVERSITY	NGL 05-020-305	Harrison, D. C.	52	1354
ARC	Jones, J. L.	STANFORD UNIVERSITY	NGR 05-020-345	Thompson, D. A.	49	1361
ARC	Chang, S.	STANFORD UNIVERSITY	NGR 05-020-405	Loew, G. H.	12	1362
ARC	Mehler, W. R.	STANFORD UNIVERSITY	NGR 05-020-435	Chow, K. L.	59	1364
ARC	Danelis, J. V.	STANFORD UNIVERSITY	NGR 05-020-456	Luetscher, J. A.	52	1366
ARC	Kelley, M. W.	STANFORD UNIVERSITY	NGR 05-020-526	Bryson, A. R.	41	1368
ARC	Park, C.	STANFORD UNIVERSITY	NGR 05-020-583	Kruger, C. H.	41	1370
ARC	Sandler, H.	STANFORD UNIVERSITY	NGR 05-020-615	Beaver, W. L.	53	1371
ARC	Rubesin, M. W.	STANFORD UNIVERSITY	NGR 05-020-622	Reynolds, W. C.	47	1372
ARC	Sandler, H.	STANFORD UNIVERSITY	NGR 05-020-634	Harrison, D. C.	52	1374
ARC	Williams, D. P.	STANFORD UNIVERSITY	NGR 05-020-662	Barnett, D. M.	47	1376
ARC	Hickey, D. H.	STANFORD UNIVERSITY	NGR 05-020-676	Karamcheti, K.	13	1379
ARC	Sandler, H.	STANFORD UNIVERSITY	NGR 05-020-690	Angell, J.	53	1380
ARC	Hruby, R. J.	STANFORD UNIVERSITY	NGR 05-020-699	Bredt, T. A.	41	1382
ARC	Goldstein, H. E.	STANFORD UNIVERSITY	NGR 05-020-710	Bates, C. W.	46	1383
ARC	Hickey, D. H.	STANFORD UNIVERSITY	NSG 2007	Karamcheti, K.	19	1390
ARC	Grant, T. L.	STANFORD UNIVERSITY	NSG 2017	Croft, T. A.	45	1391
ARC	Sandler, H.	STANFORD UNIVERSITY	NSG 2020	Popp, R.	52	1392
ARC	Billman, K. W.	STANFORD UNIVERSITY	NSG 2035	Bershader, D.	13	1393
ARC	Bradski, M.	STANFORD UNIVERSITY	NSG 2049	Walker, A. B., Jr.	11	1394
ARC	Billman, K. W.	STANFORD UNIVERSITY	NSG 2050	Mitchner, M.	13	1395
ARC	Poppa, H. R.	STANFORD UNIVERSITY	NSG 2071	Pound, G. M.	47	1396
ARC	Reynolds, R. T.	STANFORD UNIVERSITY	NSG 2072	Spreiter, J. R.	31	1397
ARC	Reynolds, R. T.	STATE UNIV NY-ALBANY	NSG 2080	Kiang, C. S.	31	2884
ARC	Cameron, R. M.	STATE U NY-STONY BRK	NGR 33-015-166	Knacke, R. F.	11	2905
ARC	Rosser, R. W.	TALLADEGA COLLEGE	NGR 01-007-010	Kray, W. D.	12	1033

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ARC	Zill, L. P.	TEXAS A&M UNIVERSITY	NCA 2-73501	Flamm, D.	12	3320
ARC	Zill, L. P.	TUFTS UNIVERSITY	NCA 2-85401	Kreifieldt, J. G.	41	2437
ARC	Zill, L. P.	TUFTS UNIVERSITY	NCA 2-85501	Kreifieldt, J. G.	41	2438
ARC	Zill, L. P.	TUFTS UNIVERSITY	NCA 2-85601	Cole, J. E., III	41	2439
ARC	Ahtye, W. F.	TUFTS UNIVERSITY	NGR 22-012-031	Cole, J. E., III	49	2441
ARC	Zill, L. P.	TULANE UNIVERSITY	NCA 2-00402	Brizzee, K. R.	51	2180
ARC	Zill, L. P.	TULANE UNIVERSITY	NCA 2-00501	Brizzee, K. R.	53	2181
ARC	Golub, M. A.	UNIV OF AKRON	NSG 2061	Gent, A. N.	13	3025
ARC	Kubokawa, C. C.	UNIV ALA-HUNTSVILLE	NSG 2058	Rogers, J. G.	69	1072
ARC	Haughney, L. C.	UNIV ALASKA-FAIRBNKS	NGR 02-001-099	Sivjee, C. G.	31	1094
ARC	Haughney, L. C.	UNIV ALASKA-FAIRBNKS	NSG 2053	Sivjee, G. G.	31	1095
ARC	Hall, C. F.	UNIV OF ARIZONA	NAS 2-6265	Gehrels, A. M.	11	1102
ARC	Wirth, M. N.	UNIV OF ARIZONA	NAS 2-7476	Baker, L. R.	11	1103
ARC	Hall, C. F.	UNIV OF ARIZONA	NAS 2-7839	Sonett, C. P.	13	1104
ARC	Tischler, E.	UNIV OF ARIZONA	NAS 2-7883	Tomasko, M.	31	1105
ARC	Hall, C. F.	UNIV OF ARIZONA	NAS 2-8818	Tomasko, M. G.	31	1106
ARC	Zill, L. P.	UNIV OF ARIZONA	NCA 2-40501	Hubbard, W. B., Jr.	11	1123
ARC	Zill, L. P.	UNIV OF ARIZONA	NCA 2-40502	Call, R. L.	45	1124
ARC	Zill, L. P.	UNIV OF ARIZONA	NCA 2-40503	Williams, P. L.	45	1125
ARC	Zill, L. P.	UNIV OF ARIZONA	NCA 2-40504	Thompson, R. I.	49	1126
ARC	Zill, L. P.	UNIV OF ARIZONA	NCA 2-40601	Caroff, L. J.	13	1127
ARC	Zill, L. P.	UNIV OF ARIZONA	NCA 2-40602	Hubbard, W. B., Jr.	11	1128
ARC	Cameron, R. M.	UNIV OF ARIZONA	NGR 03-002-332	Larson, H. P.	11	1148
ARC	Cameron, R. M.	UNIV OF ARIZONA	NGR 03-002-390	Hoffman, W. F.	11	1156
ARC	Cameron, R. M.	UNIV OF ARIZONA	NSG 2042	Woolf, N.	11	1159
ARC	Ragent, B.	UNIV ARKANSAS-FAYETV	NGL 04-001-007	Mazumder, M. K.	41	1177
ARC	Zill, L. P.	UNIV ARKANSAS-LTL RK	NCA 2-45501	Testerman, M. K.	41	1179
ARC	Kenyon, G. C.	UNIV CALIF-BERKELEY	NAS 2-7879	Horonjeff, R.	75	1407
ARC	Riccitiello, S. R.	UNIV CALIF-BERKELEY	NAS 2-8288	Williamson, R. B.	49	1408
ARC	Zill, L. P.	UNIV CALIF-BERKELEY	NCA 2-50302	Sherman, F. S.	32	1425
ARC	Zill, L. P.	UNIV CALIF-BERKELEY	NCA 2-50406	Angelakos, D.	45	1426
ARC	Zill, L. P.	UNIV CALIF-BERKELEY	NCA 2-50501	Everhart, T. E.	47	1427
ARC	Zill, L. P.	UNIV CALIF-BERKELEY	NCA 2-50502	Buxbaum, R. M.	75	1428
ARC	Zill, L. P.	UNIV CALIF-BERKELEY	NCA 2-50503	Postman, L. J.	41	1429
ARC	Zill, L. P.	UNIV CALIF-BERKELEY	NCA 2-50504	Bhattacharyya, G. K.	49	1430
ARC	Zill, L. P.	UNIV CALIF-BERKELEY	NCA 2-50508	Haftner, E. R.	69	1431
ARC	Zill, L. P.	UNIV CALIF-BERKELEY	NCA 2-50509	Nicoll, C. S.	51	1432
ARC	Zill, L. P.	UNIV CALIF-BERKELEY	NCA 2-50510	Everhart, T. E.	47	1433
ARC	Newsom, B. D.	UNIV CALIF-BERKELEY	NGL 05-003-024	Pace, N.	59	1436
ARC	Cameron, R. M.	UNIV CALIF-BERKELEY	NGR 05-003-432	Townes, C. H.	11	1447
ARC	Chapman, G. T.	UNIV CALIF-BERKELEY	NGR 05-003-451	Holt, M.	41	1450
ARC	Newsom, B. D.	UNIV CALIF-BERKELEY	NGR 05-003-470	Pace, N.	59	1453
ARC	Tanner, T. A.	UNIV CALIF-BERKELEY	NGR 05-003-471	La Porte, T. R.	79	1454
ARC	Cameron, R. M.	UNIV CALIF-BERKELEY	NGR 05-003-511	Townes, C. H.	11	1457
ARC	Billman, K. W.	UNIV CALIF-BERKELEY	NGR 05-003-559	Gustafson, T. K.	45	1460
ARC	Wrigley, R. C.	UNIV CALIF-BERKELEY	NSG 2003	Horne, A. J.	39	1464
ARC	Kourtidis, D. A.	UNIV CALIF-BERKELEY	NSG 2026	Williamson, R. B.	44	1465
ARC	Wydeven, T. J.	UNIV CALIF-BERKELEY	NSG 2043	Bell, A. T.	43	1466
ARC	Kenyon, G. C.	UNIV CALIF-BERKELEY	NSG 2046	Horonjeff, R.	41	1467
ARC	Riccitiello, S. R.	UNIV CALIF-BERKELEY	NSG 2084	Williamson, R. B.	12	1468
ARC	Winget, C. M.	UNIV CALIF-DAVIS	NAS 2-7519	Chapman, L. F.	53	1473
ARC	Taketa, S. T.	UNIV CALIF-DAVIS	NAS 2-8685	Mazelis, M.	51	1474
ARC	Zill, L. P.	UNIV CALIF-DAVIS	NCA 2-80401	Berauer, E. D.	52	1476
ARC	Zill, L. P.	UNIV CALIF-DAVIS	NCA 2-80501	Baldwin, R. L.	53	1477
ARC	Zill, L. P.	UNIV CALIF-DAVIS	NCA 2-80502	Fong, C. Y.	21	1478
ARC	Zill, L. P.	UNIV CALIF-DAVIS	NCA 2-80503	White, B. R.	41	1479
ARC	Zill, L. P.	UNIV CALIF-DAVIS	NCA 2-80504	Chapman, L. F.	61	1480
ARC	Zill, L. P.	UNIV CALIF-DAVIS	NCA 2-80505	Evans, J. W.	51	1481

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ARC	Zill, L. P.	UNIV CALIF-DAVIS	NCA 2-80506	Bernauer, E. M.	61	1482
ARC	Oyama, J.	UNIV CALIF-DAVIS	NGL 05-004-008	Smith, A. H.	51	1483
ARC	Holton, E. M.	UNIV CALIF-DAVIS	NGR 05-004-099	Horowitz, J. M.	51	1486
ARC	Mandel, A. D.	UNIV CALIF-IRVINE	NGR 05-041-012	Tilles, J. G.	52	1487
ARC	Hall, C. F.	UNIV CALIF-L ANGELES	NAS 2-7251	Coleman, P. J., Jr.	11	1488
ARC	Chang, S.	UNIV CALIF-L ANGELES	NAS 2-7440	Kaplan, I. R.	12	1489
ARC	Polentz, P. P.	UNIV CALIF-L ANGELES	NAS 2-7785	Britt, P.	41	1490
ARC	Pucine, E. R.	UNIV CALIF-L ANGELES	NAS 2-8454	Unavailable	21	1491
ARC	Tremor, J. W.	UNIV CALIF-L ANGELES	NAS 2-8646	Lindberg, R. G.	51	1492
ARC	Hall, C. F.	UNIV CALIF-L ANGELES	NAS 2-8808	Russell, C. T.	19	1493
ARC	Zill, L. P.	UNIV CALIF-L ANGELES	NCA 2-90402	Douglass, D. L.	12	1505
ARC	Zill, L. P.	UNIV CALIF-L ANGELES	NCA 2-90405	Schmit, L. A.	41	1506
ARC	Zill, L. P.	UNIV CALIF-L ANGELES	NCA 2-90406	Cole, J. D.	41	1507
ARC	Zill, L. P.	UNIV CALIF-L ANGELES	NCA 2-90501	Carterette, E. C.	21	1508
ARC	Zill, L. P.	UNIV CALIF-L ANGELES	NCA 2-90502	Parlow, A.	53	1509
ARC	Zill, L. P.	UNIV CALIF-L ANGELES	NCA 2-90503	Coleman, P. J., Jr.	32	1510
ARC	Anderson, A. E.	UNIV CALIF-L ANGELES	NGR 05-007-323	Meecham, W. C.	41	1529
ARC	Daunton, N. G.	UNIV CALIF-L ANGELES	NGR 05-007-418	Markham, C. H.	51	1539
ARC	Poppa, H. R.	UNIV CALIF-L ANGELES	NSG 2025	Douglass, D. L.	47	1543
ARC	Orloff, K. L.	UNIV CALIF-L ANGELES	NSG 2068	Charwat, A. F.	41	1544
ARC	Hall, C. F.	UNIV CALIF-SAN DIEGO	NAS 2-6552	Fillius, R. W.	11	1554
ARC	Billingham, J.	UNIV CALIF-SAN DIEGO	NGL 05-009-109	West, J. B.	53	1568
ARC	Cameron, R. M.	UNIV CALIF-SAN DIEGO	NGL 05-009-230	Soifrr, B. T.	11	1572
ARC	Cameron, R. M.	UNIV CALIF-SAN DIEGO	NGR 05-005-055	Stein, W. A.	11	1574
ARC	Winter, D. L.	UNIV CALIF-SAN DIEGO	NGR 05-009-083	Galambos, R.	61	1578
ARC	Haines, R. F.	UNIV CALIF-SAN DIEGO	NGR 05-009-192	Harris, J. L.	59	1582
ARC	Anliker, J. E.	UNIV CALIF-SAN DIEGO	NGR 05-009-198	Galambos, R.	59	1583
ARC	Sandler, H.	UNIV CALIF-SAN DIEGO	NGR 05-009-257	Baily, N. A.	52	1590
ARC	Zill, L. P.	UNIV CALIF-SAN FRAN	NCA 2-65301	Degroot, J.	51	1601
ARC	Zill, L. P.	UNIV CALIF-SAN FRAN	NCA 2-65401	Dallman, M. F.	51	1602
ARC	Zill, L. P.	UNIV CALIF-SAN FRAN	NCA 2-65402	Aly, R.	51	1603
ARC	Zill, L. P.	UNIV CALIF-SAN FRAN	NCA 2-65502	Dallman, M. F.	51	1604
ARC	Zill, L. P.	UNIV CALIF-SAN FRAN	NGL 05-025-014	Stolckenucs, W.	59	1605
ARC	Zill, L. P.	UNIV CALIF-S BARBARA	NCA 2-80501	Shanabarger, M. R.	12	1606
ARC	Hall, C. F.	UNIV OF CHICAGO	NAS 2-6551	Simpson, J. A.	11	1974
ARC	Cameron, R. M.	UNIV OF CHICAGO	NGR 14-001-211	Harper, D. A.	11	1996
ARC	Daunton, N. G.	UNIV OF CHICAGO	NGR 14-001-225	Goldberg, J. M.	51	1997
ARC	Cameron, R. M.	UNIV OF CHICAGO	NGR 14-001-227	Harper, D. A.	11	1998
ARC	Cameron, R. M.	UNIV OF CHICAGO	NSG 2057	Hildebrand, R. H.	11	2001
ARC	Burke, J. A.	UNIV OF CINCINNATI	NAS 2-7850	Tabakoff, W.	41	3026
ARC	Sinnott, D.	UNIV COLORADO-BOLDR	NAS 2-7901	Stewart, I.	31	1692
ARC	Sinnott, D. B.	UNIV COLORADO-BOLDR	NAS 2-8816	Stewart, A. I.	19	1693
ARC	Cameron, R. M.	UNIV COLORADO-BOLDR	NSG 2055	Webb, W.	11	1726
ARC	Munoz, R. M.	UNIV OF DENVER	NAS 2-8200	Murcraay, D. G.	13	1730
ARC	Quattrone, P. D.	UNIV OF DENVER	NGR 06-004-125	Ross, L. W.	12	1737
ARC	Zill, L. P.	UNIV OF FLORIDA	NCA 2-40501	Clarkson, M. H.	41	1847
ARC	Antiker, J. E.	UNIV OF FLORIDA	NGR 10-005-057	Webb, W. B.	69	1854
ARC	Williams, B. A.	UNIV OF FLORIDA	NSG 2028	Heath, J. E.	51	1859
ARC	Smith, M. C., Jr.	UNIV OF HAWAII	NAS 2-8590	Kuo, F. F.	99	1938
ARC	Smith, M. C., Jr.	UNIV OF HAWAII	NAS 2-8600	Lichtenberger, W. W.	21	1939
ARC	Taketa, S. T.	UNIV OF HAWAII	NAS 2-8687	Siegel, S. M.	51	1940
ARC	Zill, L. P.	UNIV OF HOUSTON	NCA 2-95502	Kiehn, R. M.	41	3350
ARC	Zill, L. P.	UNIV OF HOUSTON	NCA 2-95503	Bartel, A. H.	51	3351
ARC	Hart, J. P.	UNIV ILLINOIS-URBANA	NAS 2-7722	Sher, M. S.	21	2004
ARC	Slye, R. E.	UNIV ILLINOIS-URBANA	NGR 14-005-202	Ray, R. M.	21	2017
ARC	Mehler, W. R.	UNIV ILLINOIS-URBANA	NGR 14-005-221	Ades, H. W.	53	2018
ARC	Hall, C. F.	UNIV OF IOWA	NAS 2-6553	Van Allen, J. A.	11	2087
ARC	Seiff, A.	UNIV OF KANSAS	NAS 2-8556	Muirhead, V. V.	42	2108

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ARC	Zill, L. P.	UNIV OF KANSAS	NSG 4007	Roskam, J.	41	2132
ARC	Newson, B. D.	UNIV OF KENTUCKY	NAS 2-8883	Knapp, C. E.	46	2141
ARC	Oyama, J.	UNIV OF KENTUCKY	NGL 18-001-003	Lange, K. O.	61	2144
ARC	Anliker, J. E.	UNIV OF KENTUCKY	NGR 18-001-068	McCoy, D. F.	61	2147
ARC	Mehler, W. R.	UNIV OF LOUISVILLE	NSG 2067	Fuller, P. M.	51	2154
ARC	Zill, L. P.	UNIV MARYLAND-COL PK	NCA 2-20403	Ponnamperuma, C.	12	2226
ARC	Zill, L. P.	UNIV MARYLAND-COL PK	NCA 2-20501	Ponnamperuma, C.	11	2227
ARC	Chyu, W. J.	UNIV MARYLAND-COL PK	NGR 21-002-350	Yang, J. C.	41	2253
ARC	Haughney, L. C.	UNIV MARYLAND-COL PK	NSG 2079	Dick, K. A.	31	2273
ARC	Simmonds, R. C.	UNIV MICH-ANN ARBOR	NAS 2-6057	Von Baumgarten A, R. J.	61	2461
ARC	Feistel, T. W.	UNIV MICH-ANN ARBOR	NSG 2018	Kroeger, R. A.	41	2505
ARC	Galloway, T. L.	UNIV MICH-ANN ARBOR	NSG 2056	Kroeger, R. A.	41	2506
ARC	Polaski, L. J.	U MINN-MNPLS-ST PAUL	NAS 2-7900	Von Zahn, U.	31	2522
ARC	Thorley, G. W.	U MINN-MNPLS-ST PAUL	NAS 2-8812	Nier, A. O.	31	2523
ARC	Cameron, R. M.	U MINN-MNPLS-ST PAUL	NGR 24-005-267	Ney, E. P.	11	2544
ARC	Cameron, R. M.	U MINN-MNPLS-ST PAUL	NSG 2014	Ney, E. P.	11	2547
ARC	Cameron, R. M.	U MINN-MNPLS-ST PAUL	NSR 24-005-238	Ney, E. P.	11	2551
ARC	Holton, E. M.	UNIV MO-COLUMBIA	NGL 26-004-021	Musacchia, X. J.	51	2588
ARC	Sandler, H.	UNIV MO-COLUMBIA	NGR 26-004-099	Hahn, A. W.	52	2589
ARC	Ginoza, H. S.	UNIV MO-KANSAS CITY	NGR 26-001-018	Millich, F.	12	2590
ARC	Zill, L. P.	UNIV MO-ROLLA	NCA 2-50501	Levenson, L. L.	47	2592
ARC	Quattrone, P. D.	UNIV MO-ROLLA	NGR 26-004-097	Mills, J. B.	59	2594
ARC	Sebesta, P. D.	UNIV OF MONTANA	NSG 2030	Craighead, J. J.	39	2612
ARC	Nelson, H. G.	UNIV NEBRASKA-LINCLN	NGR 28-004-025	Johnson, D. L.	47	2619
ARC	Zill, L. P.	UNIV OF NEW MEXICO	NCA 2-10502	Riedesel, M. L.	51	2718
ARC	Haughney, L. C.	UNIV OF NEW MEXICO	NSG 2052	Peterson, A. W.	31	2734
ARC	Kirkpatrick, J. P.	UNIV OF NEW MEXICO	NSG 2064	Feldman, K. T., Jr.	13	2735
ARC	Cameron, R. M.	UNIV OREGON-EUGENE	NGR 38-003-034	Donnelly, R. J.	11	3081
ARC	Whiting, E. E.	UNIV OREGON-EUGENE	NGR 38-003-036	Crasemann, B.	13	3082
ARC	Zill, L. P.	UNIV OF PENNSYLVANIA	NAS 2-7730	Brown, A. H.	51	3142
ARC	Zill, L. P.	UNIV OF PENNSYLVANIA	NGR 39-010-149	Brown, A. H.	51	3145
ARC	Cameron, R. M.	UNIV OF ROCHESTER	NGR 33-019-127	Pipher, J. L.	11	2924
ARC	Taketa, S. T.	UNIV SAN FRANCISCO	NAS 2-7059	Benton, E. V.	13	1613
ARC	Zill, L. P.	UNIV SAN FRANCISCO	NCA 2-70501	Furst, A.	51	1617
ARC	Zill, L. P.	UNIV SAN FRANCISCO	NCA 2-70503	Furst, A.	52	1618
ARC	Zill, L. P.	UNIV SAN FRANCISCO	NCA 2-70504	Furst, A.	53	1619
ARC	Kourtides, D. A.	UNIV SAN FRANCISCO	NSG 2039	Hilado, C. J.	12	1620
ARC	Farlow, N. H.	UNIV SAN FRANCISCO	NSG 2051	Harding-Barlow, A. I.	31	1621
ARC	Miquel, J.	UNIV SAN FRANCISCO	NSG 2063	Benton, E. V.	51	1622
ARC	Zill, L. P.	UNIV OF SANTA CLARA	NCA 2-85408	Barker, W. A.	32	1624
ARC	Zill, L. P.	UNIV OF SANTA CLARA	NCA 2-85409	Markle, G. E.	41	1625
ARC	Zill, L. P.	UNIV OF SANTA CLARA	NCA 2-85501	Pefley, R. K.	59	1626
ARC	Zill, L. P.	UNIV OF SANTA CLARA	NCA 2-85502	Sweeney, M. A.	12	1627
ARC	Zill, L. P.	UNIV OF SANTA CLARA	NCA 2-85503	Caren, L.	53	1628
ARC	Zill, L. P.	UNIV OF SANTA CLARA	NCA 2-85505	Pefley, R. K.	41	1629
ARC	Zill, L. P.	UNIV OF SANTA CLARA	NCA 2-85507	McCormick, P. T.	31	1630
ARC	Zill, L. P.	UNIV OF SANTA CLARA	NCA 2-85508	Bruno, A.	75	1631
ARC	Zill, L. P.	UNIV OF SANTA CLARA	NCA 2-85509	Tomlison, G.	51	1632
ARC	Zill, L. P.	UNIV OF SANTA CLARA	NCA 2-85510	Alexander, G. J.	75	1633
ARC	Doolin, B. F.	UNIV OF SANTA CLARA	NGR 05-017-010	Siljak, D. D.	49	1634
ARC	Quaide, W. L.	UNIV OF SANTA CLARA	NGR 05-017-027	Greeley, R.	32	1635
ARC	Hruby, R. J.	UNIV OF SANTA CLARA	NGR 05-017-031	Dunn, W. R.	41	1636
ARC	Muhlstein, L., Jr.	UNIV OF SANTA CLARA	NGR 05-017-033	Cheng, D. Y.	41	1637
ARC	Walsh, L. J.	UNIV OF SANTA CLARA	NSG 2036	Bruno, A. V.	99	1639
ARC	Dyal, P.	UNIV OF SANTA CLARA	NSG 2075	Parkin, C. W.	13	1640
ARC	Hall, C. F.	UNIV OF SOUTHERN CAL	NAS 2-6558	Judge, D. L.	11	1642
ARC	Hall, C. F.	UNIV OF SOUTHERN CAL	NAS 2-7969	Intriligator, D. S.	11	1643
ARC	Zill, L. P.	UNIV OF SOUTHERN CAL	NCA 2-30501	Cheng, H. K.	41	1651

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ARC	Rubesin, M. W.	UNIV TEXAS-ARLINGTON	NSG 2077	Payne, F. R.	41	3365
ARC	Coe, C. F.	UNIV TEXAS-AUSTIN	NGR 44-012-221	Panton, R. L.	41	3389
ARC	Mason, R. H.	UNIV TEXAS-AUSTIN	NGR 44-012-240	Ulrich, B. T.	11	3392
ARC	Tanner, T. A.	UNIV TEXAS-AUSTIN	NSG 2065	Helmreich, R. L.	69	3403
ARC	Polaski, L. J.	UNIV TEXAS-DALLAS	NAS 2-7865	Hoffman, J. H.	31	3408
ARC	Hall, C. F.	UNIV TEXAS-DALLAS	NAS 2-8802	Hoffman, J. H.	31	3409
ARC	Sandler, H.	UNIV TEXAS-GALVESTON	NGR 44-088-002	Stone, H. L.	52	3434
ARC	Unavailable	U TEX HEALTH CTR-DAL	NAS 2-3082	Unavailable	51	3437
ARC	Kourtides, D. A.	UNIV OF UTAH	NAS 2-8244	Petatjan, J. H.	12	3450
ARC	Zill, L. P.	UNIV OF UTAH	NCA 2-21601	Smith, L. M.	51	3459
ARC	Coler, C. R.	UNIV OF UTAH	NGR 45-003-108	Plummer, R. P.	45	3464
ARC	Anliker, J. E.	UNIV OF VERMONT	NGR 46-001-041	Lai, D. C.	21	3475
ARC	Zill, L. P.	UNIV OF VIRGINIA	NCA 2-25501	Updike, O. L.	52	3566
ARC	Mehler, W. R.	UNIV OF VIRGINIA	NGR 47-005-186	Ebbesson, S. O.	51	3574
ARC	Oyama, J.	UNIV OF VIRGINIA	NGR 47-005-213	Pitts, G. C.	51	3578
ARC	Holton, E. M.	UNIV OF WASHINGTON	NAS 2-8541	Baylink, D. J.	53	3633
ARC	Zill, L. P.	UNIV OF WASHINGTON	NCA 2-50501	Businger, J. A.	41	3637
ARC	Watson, E. C.	UNIV OF WASHINGTON	NGL 48-002-047	Childs, M. E.	41	3642
ARC	Steinle, F. W., Jr.	UNIV OF WASHINGTON	NGR 48-002-107	Russell, D. A.	41	3645
ARC	Watson, E. C.	UNIV OF WASHINGTON	NGR 48-002-141	Kippenhan, C. J.	41	3648
ARC	Taketa, S. T.	UNIV WISC-MADISON	NAS 2-7314	Tibbetts, T. W.	51	3668
ARC	Twarowski, R. J.	UNIV WISC-MADISON	NAS 2-7882	Suomi, Y. E.	31	3669
ARC	Holton, E. F.	UNIV WISC-MADISON	NAS 2-8752	Deluca, H. F.	12	3670
ARC	Hall, C. F.	UNIV WISC-MADISON	NAS 2-8813	Suomi, V. E.	31	3671
ARC	Young, D. R.	UNIV WISC-MADISON	NGR 50-002-051	Cameron, J. R.	52	3691
ARC	Mandel, A. D.	UNIV WISC-MADISON	NGR 50-002-174	Dick, E. C.	52	3693
ARC	Mandel, A. D.	UNIV WISC-MADISON	NGR 50-002-191	Balish, E.	52	3695
ARC	Mandel, A. D.	UNIV WISC-MADISON	NSG 2002	Dick, E. C.	52	3701
ARC	Mason, R. H.	UNIV OF WYOMING	NGR 51-001-036	Hackwell, J. A.	31	3714
ARC	Mehler, W. R.	UPPSALA UNIVERSITY	NGR 52-028-004	Engstrom, H.	53	3730
ARC	Lowenstein, M.	UTAH STATE UNIV	NAS 2-8108	Shaw, A. W.	31	3469
ARC	Zill, L. P.	UTAH STATE UNIV	NCA 2-20501	Martin, C. F.	21	3470
ARC	Doolin, B. F.	UTAH STATE UNIV	NGR 45-002-016	Gunderson, R. W.	21	3472
ARC	Doolin, B. F.	UTAH STATE UNIV	NSG 2022	Martin, C.	49	3473
ARC	Zill, L. P.	VASSAR COLLEGE	NCA 2-23501	Christensen, C.	51	2927
ARC	Gaspers, P. A., Jr.	VIRGINIA POLY INST	NSG 2016	Weisshaar, T. A.	41	3625
ARC	Williams, D. P.	VIRGINIA POLY INST	NSG 2038	Brinson, H. F.	47	3626
ARC	Morse, H. A.	WASHINGTON UNIVERSTY	NAS 2-7613	Hohenemser, K. H.	41	2597
ARC	Young, D. R.	WAYNE STATE UNIV	NSG 2008	Sawyer, J. O.	53	2516
ARC	Danellis, J. V.	WEST VIRGINIA UNIV	NGL 49-001-019	Moran, W. H.	52	3660
ARC	Harrison, G. A.	WEST VIRGINIA UNIV	NGR 49-001-048	Leovy, C. B.	52	3661
ARC	Quattrone, P. D.	WORCESTER POLY INST	NGR 22-017-024	Weiss, A. H.	12	2453
ARC	Winget, C. M.	WRIGHT STATE UNIV	NAS 2-8578	Beljan, J. R.	53	3054
ARC	Young, D. R.	WRIGHT STATE UNIV	NSG 2034	Beljan, J. R.	53	3055
ARC	Winget, C. M.	XAVIER UNIV-LA	NGR 19-007-004	Ashman, P. U.	51	2189
ARC	Mandel, A. D.	YALE UNIVERSITY	NGR 07-004-146	Evans, A. S.	52	1756
ARC	Zill, L. P.	OREGON GRADUATE CTR	NCA 2-85501	Swanson, L. W.	51	3071
FRC	Deets, D. A.	LEHIGH UNIVERSITY	NSG 4005	Johnson, S. H.	41	3107
FRC	Szalai, K. J.	MASS INST OF TECH	NGL 22-009-548	Whitaker, H. P.	41	2369
FRC	Berry, D. T.	PURDUE UNIVERSITY	NSG 4003	Swaim, R. L.	41	2063
FRC	Kordes, E. E.	STANFORD UNIVERSITY	NGL 05-020-498	McIntosh, S. C., Jr.	41	1356
FRC	Deets, D. A.	STANFORD UNIVERSITY	NSG 4002	Debra, D. B.	41	1398
FRC	Ehernberger, L. J.	TEXAS A&M UNIVERSITY	NGR 44-001-081	Scoggins, J. R.	31	3322
FRC	Carter, A. L.	UNIV CALIF-L ANGELES	NAS 4-1995	Unavailable	41	1494
FRC	Matranga, G. J.	UNIV CALIF-L ANGELES	NAS 4-2196	Unavailable	41	1495
FRC	Rediess, H. A.	UNIV CALIF-L ANGELES	NGL 05-007-379	Balakrishnan, A. V.	41	1521
FRC	Ehernberger, L. J.	UNIV CALIF-L ANGELES	NSG 4001	Wurtele, M. G.	31	1545
FRC	Gee, S. W.	UNIV OF KANSAS	NAS 4-2148	Roskam, J.	41	2109

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
FRC	Horton, V. W.	UNIV OF KANSAS	NSG 4004	Muirhead, V. U.	49	2130
FRC	Fields, R. A.	UNIV OF KANSAS	NSG 4006	Lenzen, K. H.	41	2131
FRC	Wolf, T. D.	UNIV OF VIRGINIA	NGR 47-005-202	Jacobson, I. D.	59	3575
GSFC	Schmid, P. E.	ALCON STATE UNIV	NGR 25-012-001	Paul, M. P.	31	2553
GSFC	Schubert, J.	AMERICAN UNIVERSITY	NAS 5-21970	MacLeod, N. H.	39	1768
GSFC	Sobieski, S.	BELOIT COLLEGE	NGR 50-010-001	Schroeder, D. J.	11	3664
GSFC	Kupperian, J. E.	BOSTON UNIVERSITY	NSG 5055	Adelman, S. J.	11	2296
GSFC	Boldt, E. A.	BOWIE STATE COLLEGE	NGR 21-027-001	Tornabene, H. S.	11	2190
GSFC	Velez, C. E.	BOWIE STATE COLLEGE	NGR 21-027-004	Srivastava, S.	21	2191
GSFC	Caruso, A. J.	BOWIE STATE COLLEGE	NGR 21-027-010	Bhatia, M. S.	13	2192
GSFC	Gross, F. C.	BOWIE STATE COLLEGE	NSG 5009	Rock, M.	12	2195
GSFC	Lynch, T. J.	BROWN UNIVERSITY	NSG 5036	Cooper, D. B.	21	3177
GSFC	Davis, M. A.	CALIF INST OF TECH	NAS 5-11066	Stone, E. C.	13	1186
GSFC	Kellsall, T. N.	CALIF INST OF TECH	NAS 5-20492	Neugebauer, G.	31	1187
GSFC	Gallagher, W. F.	CALIF INST OF TECH	NAS 5-20721	Stone, E. C.	13	1188
GSFC	White, A.	CALIF INST OF TECH	NAS 5-20997	Zirin, H.	13	1189
GSFC	Sobieski, S.	CALIF INST OF TECH	NAS 5-23287	Neugebauer, G.	11	1190
GSFC	Wrublik, D. P.	CALIF INST OF TECH	NAS 5-23315	Garmire, G. P.	11	1191
GSFC	Sobieski, S.	CALIF INST OF TECH	NGR 05-002-311	Oke, J. B.	11	1226
GSFC	Lowman, P. D.	CALIF INST OF TECH	NSG 5058	Allen, C. R.	39	1232
GSFC	Velez, C. E.	CAL STATE U-FULLERTN	NGR 05-071-005	Pierce, S.	21	1251
GSFC	McAvoy, N.	CASE WESTERN RESERVE	NGR 36-027-068	Pao, Y. H.	13	2984
GSFC	Fichtel, C. E.	CATHOLIC UNIVERSITY	NGR 09-005-077	Crannell, H.	12	1773
GSFC	Stief, L. J.	CATHOLIC UNIVERSITY	NGR 09-005-103	Timmons, R. B.	12	1775
GSFC	Dennis, B. R.	CATHOLIC UNIVERSITY	NSG 5066	Wertz, C.	13	1777
GSFC	Eckerman, J.	CITY COLLEGE OF N Y	NAS 5-20041	Pierson, W. J.	33	2739
GSFC	Mueller, J. L.	CITY COLLEGE OF N Y	NAS 5-22392	Pierson, W. J.	33	2740
GSFC	Stothers, R. B.	CITY COLLEGE OF N Y	NGL 33-013-040	Erlbach, E.	11	2747
GSFC	Brown, J. P.	CITY COLLEGE OF N Y	NGR 33-013-077	Schilling, D. L.	45	2748
GSFC	Halem, M.	CITY COLLEGE OF N Y	NGR 33-013-086	Spar, J.	31	2749
GSFC	Miller, J. E.	CITY COLLEGE OF N Y	NSG 5013	Schilling, D. L.	45	2751
GSFC	Lynch, T. J.	CLEMSON UNIV-CLEMSON	NGR 41-001-036	Neelsire, R. W.	19	3184
GSFC	Stonesifer, G. R.	COLORADO SCH OF MINE	NAS 5-21778	Reeves, R. G.	31	1658
GSFC	Thekackara, M.	COLORADO STATE UNIV	NAS 5-22372	Vonder Haar, T. H.	39	1664
GSFC	Theon, J. S.	COLORADO STATE UNIV	NGR 06-002-098	Reiter, E. R.	31	1676
GSFC	Wexler, R.	COLORADO STATE UNIV	NGR 06-002-102	Vonder Haar, T. H.	31	1677
GSFC	Carpenter, L. H.	COLORADO STATE UNIV	NGR 06-002-191	Thompson, E. G.	32	1683
GSFC	Adler, R. F.	COLORADO STATE UNIV	NSG 5011	Vonder Haar, T. H.	31	1690
GSFC	Donley, J. L.	COLUMBIA UNIVERSITY	NAS 5-11362	Novick, R.	11	2756
GSFC	Guntharp, P. A.	COLUMBIA UNIVERSITY	NAS 5-22311	Fountain, T. D.	99	2757
GSFC	Donley, J. L.	COLUMBIA UNIVERSITY	NAS 5-22341	Novick, R.	11	2758
GSFC	White, R. A.	COLUMBIA UNIVERSITY	NAS 5-22408	Novick, R.	31	2759
GSFC	Smith, D. E.	COLUMBIA UNIVERSITY	NGR 33-008-146	Scholz, C. H.	19	2768
GSFC	Thaddeus, P.	COLUMBIA UNIVERSITY	NGR 33-008-191	Hartmann, S. R.	11	2774
GSFC	Muckel, G. A.	COPPIN STATE COLLEGE	NGR 21-122-001	Sommerfeldt, D. E.	21	2197
GSFC	Ford, F. E.	COPPIN STATE COLLEGE	NSG 5051	McDermott, P. P.	12	2198
GSFC	Rosenzweig, M. B.	COPPIN STATE COLLEGE	NSG 5052	Pinsky, S. S.	21	2199
GSFC	Findlay, J. A.	CORNELL UNIVERSITY	NAS 5-20705	Walker, J. C.	13	2788
GSFC	Freden, S. C.	CORNELL UNIVERSITY	NAS 5-21844	McNair, A. J.	59	2789
GSFC	Conrath, B. J.	CORNELL UNIVERSITY	NAS 5-23236	Gierasch, P. J.	13	2790
GSFC	Trombka, J. I.	CORNELL UNIVERSITY	NSG 5037	Greisen, K. I.	11	2822
GSFC	Smith, D. E.	CORNELL UNIVERSITY	NSG 5060	Turcotte, D. L.	32	2823
GSFC	Westrom, J. L.	DC TEACHERS COLLEGE	NGR 09-053-003	Bever, R. S.	39	1779
GSFC	Jastrow, R.	DARTMOUTH COLLEGE	NSG 5014	Huke, R. E.	39	2629
GSFC	Trombka, J. I.	DE ANZA COLLEGE	NSG 2005	Greisen, K. I.	32	1260
GSFC	Picciolo, G. L.	DELAWARE STATE COL	NGR 08-002-003	Bush, V. N.	51	1760
GSFC	Aikin, A. C.	DELAWARE STATE COL	NGR 08-002-005	Helmy, E. M.	13	1761
GSFC	Picciolo, G. L.	DELAWARE STATE COL	NSG 5007	Bush, V. N.	12	1762

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GSFC	Rodriquez, G. E.	DUKE UNIVERSITY	NAS 5-22475	Wilson, T. G.	45	2932
GSFC	Rodriguez, G. E.	DUKE UNIVERSITY	NGL 34-001-001	Wilson, T. J.	45	2933
GSFC	Trombka, J. I.	DUKE UNIVERSITY	NGR 34-001-041	O'Foghluha, F. R.	11	2934
GSFC	Cote, C. E.	DUKE UNIVERSITY	NSG 5020	Wang, P. P.	45	2937
GSFC	Heath, D. F.	FAIRFIELD UNIVERSITY	NGR 07-010-002	McElaney, J. H.	31	1742
GSFC	McDonald, F. B.	FEDERAL CITY COLLEGE	NGR 09-050-001	Whiteside, H.	13	1780
GSFC	Webster, W. H., Jr.	FEDERAL CITY COLLEGE	NGR 09-050-003	Nottingham, W. C.	11	1781
GSFC	Alterescu, S.	FEDERAL CITY COLLEGE	NGR 09-050-013	Friedman, C.	52	1783
GSFC	Nava, D. F.	FEDERAL CITY COLLEGE	NGR 09-050-019	Phelps, H. L.	39	1784
GSFC	Fuchs, A. J.	FEDERAL CITY COLLEGE	NGR 09-050-020	Bakshi, J. S.	21	1785
GSFC	Lancaster, E. R.	FEDERAL CITY COLLEGE	NSG 5003	Johnson, E. S.	21	1786
GSFC	Langel, R. A.	FLORIDA INST OF TECH	NSG 5038	Jin, R. S.	13	1834
GSFC	Chen, W.	GALLAUDET COLLEGE	NSG 5019	Tobin, H.	52	1787
GSFC	Moore, J. V.	GEORGE WASHINGTON U	NGR 09-010-090	Kahn, W. K.	49	1797
GSFC	Levine, D. M.	GEORGIA INST OF TECH	NAS 5-20956	Robertson, D. W.	31	1886
GSFC	O'Donnell, H.	GEORGIA INST OF TECH	NAS 5-22344	Rayan, C. E.	45	1887
GSFC	Dod, L. R.	GEORGIA INST OF TECH	NAS 5-22422	Jenkins, H. H.	45	1888
GSFC	King, J. L.	GEORGIA INST OF TECH	NSG 5012	Dees, J. W.	45	1920
GSFC	Picciolo, G. L.	HAHNEMANN MED COL	NAS 5-20865	Gutekunst, R. R.	59	3096
GSFC	Underhill, A. B.	HARVARD UNIVERSITY	NAS 5-20764	Dupree, A. K.	11	2301
GSFC	Donley, J. L.	HARVARD UNIVERSITY	NAS 5-22343	Reeves, E. M.	11	2302
GSFC	White, A.	HARVARD UNIVERSITY	NAS 5-22374	Withbroe, G. L.	11	2303
GSFC	Findlay, J. A.	HARVARD UNIVERSITY	NAS 5-23199	McElroy, M. B.	31	2304
GSFC	McAvoy, N.	HARVARD UNIVERSITY	NGL 22-007-117	Bloembergen, N.	13	2309
GSFC	Theon, J. S.	HARVARD UNIVERSITY	NGR 22-007-275	Lindzen, R. S.	31	2321
GSFC	Kupperian, J. E.	HARVARD UNIVERSITY	NGR 22-007-285	Noyes, R. W.	11	2322
GSFC	Okeefe, J. A.	HOWARD UNIVERSITY	NGL 09-011-006	Thorpe, A. N.	13	1808
GSFC	Mentall, J. E.	HOWARD UNIVERSITY	NGR 09-011-004	Thorpe, A. N.	13	1811
GSFC	Chen, W.	HOWARD UNIVERSITY	NGR 09-011-055	Fischmann, E. J.	52	1814
GSFC	Hobbs, R. W.	HOWARD UNIVERSITY	NGR 09-011-056	Kumar, C. K.	11	1815
GSFC	Yin, L. I.	HOWARD UNIVERSITY	NGR 09-011-057	Tsang, T.	13	1816
GSFC	Alterescu, S.	HOWARD UNIVERSITY	NSG 5016	Herson, J.	53	1821
GSFC	Maran, S. P.	HOWARD UNIVERSITY	NSG 5021	Kumar, C. K.	11	1822
GSFC	Findlay, J. A.	JOHNS HOPKINS UNIV	NAS 5-11415	Doering, D. M.	31	2201
GSFC	Gross, F. C.	JOHNS HOPKINS UNIV	NAS 5-22071	Rubin, R. J.	53	2202
GSFC	Bogges, A., III	JOHNS HOPKINS UNIV	NAS 5-23316	Rochelle, R. W.	11	2203
GSFC	Sobieski, S.	JOHNS HOPKINS UNIV	NGR 21-001-115	Fastie, W. G.	11	2208
GSFC	Kupperian, J. E.	JOHNS HOPKINS UNIV	NGR 21-001-120	Moos, H. W.	11	2210
GSFC	Kupperian, J. E.	JOHNS HOPKINS UNIV	NSG 5029	Henry, R. C.	11	2211
GSFC	Maran, S. P.	JOHNS HOPKINS UNIV	NSG 5065	Feldman, P. D.	11	2212
GSFC	Kupperian, J. E.	JOHNS HOPKINS UNIV	NSG 5067	Moos, H. W.	11	2213
GSFC	Major, F. G.	LAVAL UNIVERSITY	NGR 52-133-001	Vanier, J.	45	3718
GSFC	Alterescu, S.	LINCOLN UNIV-PA	NSG 5008	Frankowsky, J. W.	52	3109
GSFC	Jastrow, R.	LONG ISLAND UNIV	NGR 33-151-006	Yost, E.	32	2830
GSFC	Ormes, J. F.	LA STATE U-BAT ROUGE	NAS 5-20883	Huggett, R. W.	13	2162
GSFC	Browning, R. K.	LA STATE U-BAT ROUGE	NAS 5-23174	Huggett, R. W.	11	2163
GSFC	Davis, M. A.	MASS INST OF TECH	NAS 5-11062	Bridge, H. S.	13	2336
GSFC	Ostaff, W. A.	MASS INST OF TECH	NAS 5-11082	Clark, G. W.	19	2337
GSFC	Piterski, N. J.	MASS INST OF TECH	NAS 5-11450	Clark, G. W.	11	2338
GSFC	Ratliff, R. B.	MASS INST OF TECH	NAS 5-21980	Staelin, D. H.	31	2339
GSFC	Unavailable	MASS INST OF TECH	NAS 5-22485	Unavailable	11	2340
GSFC	Wilheit, T. T.	MASS INST OF TECH	NGR 22-009-421	Barrett, A. H.	31	2378
GSFC	Halem, M.	MASS INST OF TECH	NGR 22-009-727	Charney, J.	31	2392
GSFC	McAvoy, N. A.	MASS INST OF TECH	NGR 22-009-741	Javan, A.	13	2396
GSFC	Sobieski, S.	MASS INST OF TECH	NGR 22-009-778	McCord, T. B.	11	2398
GSFC	Clark, T. A.	MASS INST OF TECH	NGR 22-009-839	Shapiro, I. I.	99	2409
GSFC	Shorter, C. W.	MORGAN STATE COLLEGE	NGR 21-025-011	Collagan, R. B.	99	2217
GSFC	Broderick, J.	NEW MEX INST MINING	NAS 5-20916	Vander Linden	32	2695

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GSFC	Maran, S. O.	NEW MEX INST MINING	NCA 5-30	Whipple, F. L.	11	2696
GSFC	Maran, S. P.	NEW MEX INST MINING	NCA 5-43	Hume, W.	11	2697
GSFC	Maran, S. P.	NEW MEX INST MINING	NCA 5-48	Hume, W.	19	2698
GSFC	Lantz, P. A.	NEW MEX ST U-LAS CR	NAS 5-20565	Henry, D. G.	19	2701
GSFC	Bissell, E. E., Jr.	NEW MEX ST U-LAS CR	NAS 5-20681	Sayles, A., Jr.	19	2702
GSFC	Mangus, J. D.	NEW YORK INST TECH	NGR 33-230-001	Stroke, G. W.	19	2831
GSFC	Schnetzler, C. C.	NEW YORK UNIVERSITY	NAS 5-20961	Bottino, M. L.	75	2835
GSFC	Halem, M.	NEW YORK UNIVERSITY	NGL 33-016-013	Isaacson, E.	31	2837
GSFC	Schneck, P. B.	NEW YORK UNIVERSITY	NSG 5032	Schwartz, J. T.	13	2848
GSFC	Stewart, R. W.	NEW YORK UNIVERSITY	NSG 5033	Hoffert, M. I.	31	2849
GSFC	Halem, M.	NEW YORK UNIVERSITY	NSG 5034	Isaacson, E.	31	2850
GSFC	Halem, M.	NEW YORK UNIVERSITY	NSG 5045	Hoffert, M. I.	31	2851
GSFC	Hirschmann, E.	OHIO STATE UNIV	NAS 5-20521	Founty, R. A.	39	3004
GSFC	Hirschmann, E.	OHIO STATE UNIV	NAS 5-21983	Levis, C. A.	31	3005
GSFC	Hirschmann, E.	OHIO STATE UNIV	NGR 36-008-080	Ksienski, A. A.	45	3012
GSFC	Marsh, J. G.	OHIO STATE UNIV	NGR 36-008-161	Rapp, R. H.	32	3013
GSFC	Bonavito, N.	OHIO UNIVERSITY	NAS 5-20885	Tanuka, T.	13	3023
GSFC	Kelsall, T. N.	OLD DOMINION UNIV	NSG 5053	Becher, J.	19	3559
GSFC	Crump, E. W.	OREGON STATE UNIV	NAS 5-21831	Smionson, G. H.	39	3073
GSFC	Mueller, J. L.	OREGON STATE UNIV	NAS 5-22319	Zumeveld, R. V.	33	3074
GSFC	Schnetzler, C. C.	PENNSYLVANIA STATE U	NAS 5-22304	Petersen, G. W.	32	3111
GSFC	Szajna, E. F.	PENNSYLVANIA STATE U	NAS 5-23133	McMurtry, G. J.	39	3112
GSFC	Halem, M.	POLY INST OF NY	NSG 5041	Miller, J. E.	31	2863
GSFC	Kupperian, J. E.	PRINCETON UNIVERSITY	NAS 5-1810	Spitzer, L., Jr.	11	2649
GSFC	Sobieski, S.	PRINCETON UNIVERSITY	NAS 5-20069	Spitzer, L., Jr.	11	2650
GSFC	Kelsall, T. N.	PRINCETON UNIVERSITY	NAS 5-20507	Lowrance, J. L.	49	2651
GSFC	Sobieski, S.	PRINCETON UNIVERSITY	NAS 5-20833	Lowrance, J. L.	11	2652
GSFC	Lecrone, D. F.	PRINCETON UNIVERSITY	NAS 5-22360	Jenkins, E. B.	32	2653
GSFC	Sobieski, S.	PRINCETON UNIVERSITY	NAS 5-22482	Danielson, R. E.	12	2654
GSFC	Sobieski, S.	PRINCETON UNIVERSITY	NAS 5-23284	Danielson, R. E.	11	2655
GSFC	Barbieri, R. W.	PRINCETON UNIVERSITY	NGR 31-001-152	Lion, P. M.	42	2663
GSFC	Sobieski, S.	PRINCETON UNIVERSITY	NGR 31-001-236	Spitzer, L., Jr.	11	2667
GSFC	Sobieski, S.	PRINCETON UNIVERSITY	NGR 31-001-306	Morton, D. C.	11	2673
GSFC	Kelsall, T. N.	PRINCETON UNIVERSITY	NSG 5063	Lowrance, J. L.	49	2683
GSFC	Boggess, A., III	PRINCETON UNIVERSITY	NSR 31-001-286	Lowrance, J. L.	11	2689
GSFC	Stonesifer, G. R.	PURDUE UNIVERSITY	NAS 5-20793	Bauer, M. E.	59	2040
GSFC	Pritchard, J. A.	PURDUE UNIVERSITY	NAS 5-20922	Phillips, T. L.	49	2041
GSFC	Freden, S. C.	PURDUE UNIVERSITY	NAS 5-21773	McDonald, R. B.	39	2042
GSFC	Freden, S. C.	PURDUE UNIVERSITY	NAS 5-21785	Baumgardner, M. F.	19	2043
GSFC	Freden, S. C.	PURDUE UNIVERSITY	NAS 5-21880	Bouchillon, C. W.	99	2044
GSFC	Lynch, T. J.	PURDUE UNIVERSITY	NGR 15-005-152	Wintz, P. A.	45	2056
GSFC	Lynch, T. J.	PURDUE UNIVERSITY	NSG 5010	Wintz, P. A.	32	2064
GSFC	Meese, K. J.	RICE UNIVERSITY	NAS 5-9317	Anderson, H. R.	32	3270
GSFC	Taylor, H. A., Jr.	RICE UNIVERSITY	NAS 5-23338	Cloutier, P. A.	13	3271
GSFC	Short, N. M.	ST LAWRENCE UNIV	NSG 5018	Erickson, J. M.	32	2880
GSFC	Roosen, R. G.	SAN DIEGO STATE UNIV	NAS 5-20772	Angione, R. J.	31	1269
GSFC	Brandt, J. C.	SAN DIEGO STATE UNIV	NAS 5-23249	Angione, R. J.	11	1270
GSFC	Gordon, F., Jr.	SO DAKOTA STATE UNIV	NAS 5-20982	Schmer, F.	32	3194
GSFC	Kutz, R. L.	SOUTHEASTN MASS UNIV	NGR 22-031-002	Chen, C. H.	45	2436
GSFC	Baker, J.	STANFORD UNIVERSITY	NAS 5-10102	Villard, O. G.	45	1312
GSFC	Davis, M. A.	STANFORD UNIVERSITY	NAS 5-20871	Helliwell, R. A.	13	1313
GSFC	Derdeyn, S. M.	STANFORD UNIVERSITY	NAS 5-20987	Hofstadter, R.	11	1314
GSFC	Crump, E. W.	STANFORD UNIVERSITY	NAS 5-21884	Lyon, R. P.	32	1315
GSFC	Lidston, J. M.	STANFORD UNIVERSITY	NAS 5-21960	Debra, D. B.	42	1316
GSFC	Wrublik, D. P.	STANFORD UNIVERSITY	NAS 5-23117	Hofstadter, R.	11	1317
GSFC	Heath, D. F.	STANFORD UNIVERSITY	NSG 5024	Wilcox, J. M.	31	1399
GSFC	Schutt, J. B.	STANFORD UNIVERSITY	NSG 5050	Lyon, R. J.	32	1400
GSFC	Klinglesmith, D. A.	STATE UNIV NY-ALBANY	NAS 5-20683	Alvord, G. C.	11	2881

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GSFC	Hobbs, R. W.	STATE UNIV NY-ALBANY	NGR 33-182-018	Weinberg, J. L.	11	2883
GSFC	Chen, W. T.	ST U NY-DNST MED CTR	NAS 5-22277	Fealey, R. D.	52	2915
GSFC	Chiu, H. Y.	STATE U NY-STONY BRK	NGL 33-015-082	Owen, T.	11	2896
GSFC	Hansen, J. E.	STATE U NY-STONY BRK	NGR 33-015-165	Owen, T.	31	2904
GSFC	Hobbs, R. W.	STATE U NY-STONY BRK.	NGR 33-015-195	Simon, M.	11	2908
GSFC	Mangus, J. D.	STATE U NY-STONY BRK	NGR 33-015-196	Stroke, G. W.	13	2909
GSFC	Hansen, J. E.	STATE U NY-STONY BRK	NSG 5015	Hogan, J. S.	31	2911
GSFC	Damon, E. P.	TEXAS A&M UNIVERSITY	NAS 5-11988	Simmons, D. B.	21	3296
GSFC	Damon, E. P.	TEXAS A&M UNIVERSITY	NAS 5-20715	Simmons, D. B.	21	3297
GSFC	Stonesifer, G. R.	TEXAS A&M UNIVERSITY	NAS 5-20796	Rouse, J.	59	3298
GSFC	Houis, W. A.	TEXAS A&M UNIVERSITY	NAS 5-20877	Creasteau, J.	33	3299
GSFC	Freden, S. C.	TEXAS A&M UNIVERSITY	NAS 5-21857	Rouse, J. W., Jr.	39	3300
GSFC	McAvoy, N.	UNION COLLEGE	NGR 33-032-004	Galantowicz, A.	13	2921
GSFC	Broderick, J.	UNIV ALASKA-FAIRBNKS	NAS 5-20803	Gedney, L.	32	1086
GSFC	Oseroff, H.	UNIV ALASKA-FAIRBNKS	NAS 5-20915	Lent, P.	39	1087
GSFC	Crump, E. W.	UNIV ALASKA-FAIRBNKS	NAS 5-20959	Stringer, W.	33	1088
GSFC	Crump, E. W.	UNIV ALASKA-FAIRBNKS	NAS 5-21833	Belon, A. E.	31	1089
GSFC	Meese, K. J.	UNIV OF ARIZONA	NAS 5-11444	L'Heureux, J. J.	13	1107
GSFC	Freden, S. C.	UNIV OF ARIZONA	NAS 5-21812	McGinnies, W. G.	59	1108
GSFC	Stonesifer, G. R.	UNIV OF ARIZONA	NAS 5-21820	Smith, E. L., Jr.	39	1109
GSFC	Stecher, T. P.	UNIV OF ARIZONA	NAS 5-22263	Kuiper, G. P.	11	1110
GSFC	Browning, R. K.	UNIV OF ARIZONA	NAS 5-23176	Bowen, T.	11	1111
GSFC	Maran, S. O.	UNIV OF ARIZONA	NCA 5-38	Burke, J. J.	19	1129
GSFC	Maran, S. O.	UNIV OF ARIZONA	NCA 5-39	Epps, H. W.	19	1130
GSFC	Pearl, J. C.	UNIV OF ARIZONA	NCA 5-47	Fink, U. W.	11	1131
GSFC	Hoffman, W. F.	UNIV OF ARIZONA	NGR 03-002-180	Lee, T. A.	11	1144
GSFC	Sobieski, S.	UNIV OF ARIZONA	NGR 03-002-363	Serkowski, K. M.	11	1150
GSFC	Sobieski, S.	UNIV OF ARIZONA	NGR 03-002-372	Gilbert, G. R.	11	1153
GSFC	Heath, D. F.	UNIV OF ARIZONA	NGR 03-002-382	Herman, B. M.	31	1154
GSFC	Hobbs, R. W.	UNIV OF ARIZONA	NGR 03-002-392	Fink, U. W.	11	1157
GSFC	Hobbs, R. W.	UNIV OF ARIZONA	NGR 03-002-393	Larson, S. M.	11	1158
GSFC	Sobieski, S.	UNIV OF ARIZONA	NSG 5001	Angel, J. R.	11	1160
GSFC	McAvoy, N. A.	UNIV OF ARIZONA	NSG 5022	Lamb, W. E., Jr.	13	1161
GSFC	Le Vine, D. M.	UNIV OF ARIZONA	NSG 5023	Krider, E. P.	31	1162
GSFC	Hansen, J. E.	UNIV OF ARIZONA	NSG 5043	Gehrels, A. M.	11	1163
GSFC	Curran, R. J.	UNIV OF ARIZONA	NSG 5046	Herman, B. M.	31	1164
GSFC	Szajna, E. F.	UNIV ARKANSAS-FAYETV	NAS 5-20810	MacDonald, H.	39	1175
GSFC	Davis, M. A.	UNIV CALIF-BERKELEY	NAS 5-20079	Anderson, K. A.	13	1409
GSFC	Davis, M. A.	UNIV CALIF-BERKELEY	NAS 5-20080	Mozer, F. S.	13	1410
GSFC	Davis, M. A.	UNIV CALIF-BERKELEY	NAS 5-20838	Anderson, K. A.	13	1411
GSFC	Stonesifer, G. R.	UNIV CALIF-BERKELEY	NAS 5-20969	Colwell, R. N.	32	1412
GSFC	Gallagher, W. F.	UNIV CALIF-BERKELEY	NAS 5-20995	Heckman, H. H.	13	1413
GSFC	Crump, E. W.	UNIV CALIF-BERKELEY	NAS 5-21827	Colwell, R. N.	39	1414
GSFC	Gallagher, W. F.	UNIV CALIF-BERKELEY	NAS 5-22307	Anderson, K. A.	32	1415
GSFC	Kupperian, J. E.	UNIV CALIF-BERKELEY	NGR 05-003-587	Spinrad, H.	11	1463
GSFC	Kupperian, J. E.	UNIV CALIF-BERKELEY	NSG 5057	Bowyer, C. S.	11	1470
GSFC	Wales, R. O.	UNIV CALIF-L ANGELES	NAS 5-11674	Coleman, P. J., Jr.	32	1496
GSFC	Davis, M. A.	UNIV CALIF-L ANGELES	NAS 5-20064	Russell, C. T.	13	1497
GSFC	Bandeen, W. R.	UNIV CALIF-L ANGELES	NAS 5-21968	Kuriyan, J. G.	31	1498
GSFC	Wexler, R.	UNIV CALIF-L ANGELES	NGR 05-007-091	Mintz, Y.	31	1522
GSFC	Halem, M.	UNIV CALIF-L ANGELES	NGR 05-007-328	Mintz, Y.	31	1530
GSFC	Kupperian, J. E.	UNIV CALIF-L ANGELES	NGR 05-007-489	Plavec, M.	11	1541
GSFC	Kupperian, J. E.	UNIV CALIF-L ANGELES	NSG 5056	Peters, C. J.	11	1546
GSFC	Kupperian, J. E.	UNIV CALIF-L ANGELES	NSG 5070	Jura, M. A.	11	1547
GSFC	Temkin, A.	UNIV CALIF-RIVERSIDE	NGL 05-008-005	Poe, R. T.	13	1552
GSFC	Berko, F. W.	UNIV CALIF-SAN DIEGO	NAS 5-11080	Baity, W. A.	19	1555
GSFC	Donley, J. L.	UNIV CALIF-SAN DIEGO	NAS 5-11081	Peterson, L. E.	31	1556
GSFC	Wales, R. O.	UNIV CALIF-SAN DIEGO	NAS 5-21055	McIlwain, C. E.	13	1557

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
GSFC	White, A.	UNIV CALIF-SAN DIEGO	NAS 5-22375	Peterson, L. E.	11	1558
GSFC	Sobieski, S.	UNIV CALIF-SAN DIEGO	NGR 05-009-239	Beaver, E. A.	11	1587
GSFC	Carpenter, L. H.	UNIV CALIF-SAN DIEGO	NGR 05-009-246	Berger, J.	39	1588
GSFC	Shulman, A. R.	UNIV CALIF-SAN DIEGO	NGR 05-009-260	Lee, S. H.	13	1591
GSFC	Schaefer, D. H.	UNIV CALIF-SAN DIEGO	NGR 05-009-264	Lee, S. H.	49	1592
GSFC	Meese, K. J.	UNIV OF CHICAGO	NAS 5-9096	Meyer, P.	13	1975
GSFC	Davis, M. A.	UNIV OF CHICAGO	NAS 5-11067	Sharp, J. D.	13	1976
GSFC	Gallagher, W. F.	UNIV OF CHICAGO	NAS 5-20674	Meyer, P.	13	1977
GSFC	White, A. F., Jr.	UNIV OF CHICAGO	NAS 5-20967	Meyer, P.	11	1978
GSFC	Sobieski, S.	UNIV OF CHICAGO	NAS 5-23288	Van Altena, W. F.	11	1979
GSFC	Shenk, W. E.	UNIV OF CHICAGO	NGR 14-001-008	Fujita, T. T.	31	1990
GSFC	Kupperian, J. E.	UNIV OF CHICAGO	NSG 5068	Adams, T. E.	11	2002
GSFC	Lafleur, W.	UNIV OF CHILE	NAS 5-1925	Danyau, C. R.	99	3723
GSFC	Lancaster, E. R.	UNIV OF CINCINNATI	NGR 36-004-068	Danielli, J. F.	11	3033
GSFC	Donley, J. L.	UNIV COLORADO-BOLDR	NAS 5-11363	Brunner, E. C.	11	1694
GSFC	Findlay, J. A.	UNIV COLORADO-BOLDR	NAS 5-11405	Barth, C. A.	31	1695
GSFC	Broderick, J.	UNIV COLORADO-BOLDR	NAS 5-20914	Ives, J. D.	32	1696
GSFC	Szajna, E. F.	UNIV COLORADO-BOLDR	NAS 5-20948	Krebs, P.	59	1697
GSFC	White, R. A.	UNIV COLORADO-BOLDR	NAS 5-22409	Bruner, E. C.	31	1698
GSFC	Pirraglia, J.	UNIV COLORADO-BOLDR	NAS 5-22440	Hard, C.	31	1699
GSFC	Underhill, A. B.	UNIV COLORADO-BOLDR	NAS 5-23274	Linsky, J. L.	11	1700
GSFC	Sobieski, S.	UNIV COLORADO-BOLDR	NGR 06-003-219	Lillie, C. F.	11	1718
GSFC	Crump, E. W.	UNIV OF DELAWARE	NAS 5-20983	Klemas, V.	33	1764
GSFC	Hobbs, R. W.	UNIV OF DENVER	NAS 5-23190	Edrich, J.	13	1731
GSFC	Hobbs, R. W.	UNIV OF DENVER	NGR 06-004-133	Lesh, J. R.	11	1739
GSFC	Kupperian, J. E.	UNIV OF DENVER	NSG 5004	Lesh, J. R.	11	1740
GSFC	Kupperian, J. E.	UNIV OF DENVER	NSG 5069	Lesh, J. R.	11	1741
GSFC	Unavailable	UNIV OF FLORIDA	NGR 10-005-183	Wood, F. B.	11	1858
GSFC	Heath, D. F.	UNIV OF FLORIDA	NSG 5026	Prasad, S. S.	31	1861
GSFC	Peake, H. J.	UNIV OF FLORIDA	NSG 5061	Bailey, R. L.	45	1862
GSFC	Kupperian, J. E.	UNIV OF HAWAII	NSG 5027	Boesgaard, A. M.	11	1951
GSFC	Schneck, P. B.	UNIV ILLINOIS-URBANA	NAS 5-23334	Slotnick, D.	21	2005
GSFC	Bulfton, J. L.	UNIV ILLINOIS-URBANA	NSG 5049	Gardner, C. S.	19	2023
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-11039	Frank, L. A.	13	2088
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-11064	Frank, L. A.	13	2089
GSFC	Madden, J. J.	UNIV OF IOWA	NAS 5-11074	Gurnett, D. A.	11	2090
GSFC	Denwiddie, M.	UNIV OF IOWA	NAS 5-11167	Gurnett, D. A.	13	2091
GSFC	Eaker, H. L.	UNIV OF IOWA	NAS 5-11265	Frank, L. A.	13	2092
GSFC	White, C. E.	UNIV OF IOWA	NAS 5-11279	Gurnett, D. A.	11	2093
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-11431	Gurnett, D. A.	31	2094
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-20093	Gurnett, D. A.	13	2095
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-20094	Frank, L. A.	13	2096
GSFC	Allen, R. F., Jr.	UNIV OF IOWA	NAS 5-20539	Van Allen, J. A.	11	2097
GSFC	Stonesifer, G. R.	UNIV OF IOWA	NAS 5-21852	Hoppin, R. A.	32	2098
GSFC	Broderick, J.	UNIV OF KANSAS	NAS 5-20943	Haralick, R. M.	32	2110
GSFC	Stonesifer, G. R.	UNIV OF KANSAS	NAS 5-21822	Kanemasu, E. T.	39	2111
GSFC	Eckerman, J.	UNIV OF KANSAS	NAS 5-22325	Moore, R. K.	32	2112
GSFC	Shive, J. C.	UNIV OF KANSAS	NAS 5-22384	Moore, R. K.	32	2113
GSFC	Davis, M. A.	UNIV MARYLAND-COL PK	NAS 5-11063	Gloeckler, G.	13	2220
GSFC	Davis, M. A.	UNIV MARYLAND-COL PK	NAS 5-20062	Gloeckler, G.	13	2221
GSFC	Stief, L. J.	UNIV MARYLAND-COL PK	NAS 5-20834	Ponnamperuma, C. A.	12	2222
GSFC	Conrath, B. J.	UNIV MARYLAND-COL PK	NAS 5-20872	Ponnamperuma, C. A.	12	2223
GSFC	Conrath, B. J.	UNIV MARYLAND-COL PK	NAS 5-23237	Ponnamperuma, C. A.	13	2224
GSFC	Fjschel, D.	UNIV MARYLAND-COL PK	NCA 5-1	Rosenfeld, A.	11	2228
GSFC	Klinglesmith, D. A.	UNIV MARYLAND-COL PK	NCA 5-5	Rosenfeld, A.	11	2229
GSFC	Dennis, B. R.	UNIV MARYLAND-COL PK	NCA 5-6	Rose, W.	19	2230
GSFC	Cranell, C. J.	UNIV MARYLAND-COL PK	NCA 5-7	Westerhaut, G.	19	2231
GSFC	Abid, G. E.	UNIV MARYLAND-COL PK	NGL 21-002-033	Laster, H. E.	31	2233

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GSFC	Fainberg, J.	UNIV MARYLAND-COL PK	NGL 21-002-367	Kundu, M. R.	11	2234
GSFC	Brace, L. H.	UNIV MARYLAND-COL PK	NGR 21-002-096	Matthews, D. L.	31	2239
GSFC	Ogilvie, K. W.	UNIV MARYLAND-COL PK	NGR 21-002-291	Coplan, M. A.	13	2245
GSFC	Mentzer, R. H.	UNIV MARYLAND-COL PK	NGR 21-002-296	Pai, S. I.	31	2246
GSFC	Teegarden, B. J.	UNIV MARYLAND-COL PK	NGR 21-002-316	Gloeckler, G.	13	2249
GSFC	Hurt, C. R.	UNIV MARYLAND-COL PK	NGR 21-002-345	Hochuli, U. E.	45	2252
GSFC	Alford, W. A.	UNIV MARYLAND-COL PK	NGR 21-002-351	Rosenfeld, A.	49	2254
GSFC	Philpotts, J. A.	UNIV MARYLAND-COL PK	NGR 21-002-368	Weidner, J. R.	32	2255
GSFC	Arking, A.	UNIV MARYLAND-COL PK	NGR 21-002-378	Rosenfeld, A.	31	2256
GSFC	Smith, D. E.	UNIV MARYLAND-COL PK	NGR 21-002-390	Currie, D. G.	19	2258
GSFC	Rango, A.	UNIV MARYLAND-COL PK	NGR 21-002-399	Weidner, J. R.	32	2259
GSFC	Rosenbaum, B.	UNIV MARYLAND-COL PK	NGR 21-002-412	Richard, J. P.	13	2262
GSFC	Marini, J. W.	UNIV MARYLAND-COL PK	NGR 21-002-433	Harger, R. O.	33	2264
GSFC	Buften, J. L.	UNIV MARYLAND-COL PK	NGR 21-002-444	Currie, D. G.	13	2266
GSFC	Salomonson, V. V.	UNIV MARYLAND-COL PK	NSG 5017	Ragan, R. M.	32	2275
GSFC	Clark, T. A.	UNIV MARYLAND-COL PK	NSG 5035	Richard, J. P.	11	2276
GSFC	Degnan, J. J.	UNIV MARYLAND-COL PK	NSG 5042	Hochuli, U. E.	49	2277
GSFC	Cressy, P. J.	UNIV MARYLAND-COL PK	NSG 5047	Sommer, S. E.	32	2278
GSFC	Levine, D. M.	UNIV MARYLAND-COL PK	NSG 5048	Harger, R. O.	45	2279
GSFC	Kupperian, J. E.	UNIV MARYLAND-COL PK	NSG 5059	Bell, R. A.	11	2280
GSFC	Fitzmaurice, M. W.	UNIV MARYLAND-COL PK	NSG 5062	Alley, C. O.	99	2281
GSFC	Fitzmaurice, M. W.	UNIV MD-EASTRN SHORE	NGR 21-119-001	Singh, G.	19	2286
GSFC	Rolinski, A. J.	UNIV OF MASS-AMHERST	NGL 22-010-018	Monopoli, R. V.	45	2443
GSFC	Thekackara, M.	UNIV OF MIAMI	NAS 5-22417	Hiser, H. W.	19	1863
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-11073	Carignan, G. R.	13	2463
GSFC	Cooley, J. E.	UNIV MICH-ANN ARBOR	NAS 5-11128	Carignan, G. R.	31	2464
GSFC	Pelz, D. T.	UNIV MICH-ANN ARBOR	NAS 5-11309	Carignan, G. R.	11	2465
GSFC	Pelz, D. T.	UNIV MICH-ANN ARBOR	NAS 5-11376	Carignan, G. R.	31	2466
GSFC	Sing, M. L.	UNIV MICH-ANN ARBOR	NAS 5-11380	Cliff, R. A.	31	2467
GSFC	Wright, D. U.	UNIV MICH-ANN ARBOR	NAS 5-20622	Horvath, J. J.	31	2468
GSFC	Krehbiel, J. P.	UNIV MICH-ANN ARBOR	NAS 5-20806	Brace, L. H.	31	2469
GSFC	Davis, M. A.	UNIV MICH-ANN ARBOR	NAS 5-20839	Haddock, F. T.	13	2470
GSFC	Unavailable.	UNIV MICH-ANN ARBOR	NAS 5-20939	Unavailable	13	2471
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-22441	Carignan, G. R.	19	2472
GSFC	Findlay, J. A.	UNIV MICH-ANN ARBOR	NAS 5-23006	Hays, P. B.	31	2473
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-23230	Carignan, G. R.	31	2474
GSFC	Ross, R. W.	UNIV MICH-ANN ARBOR	NAS 5-23267	Ponnamperuma, C. A.	45	2475
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-23310	Carignan, G. R.	11	2476
GSFC	Curran, R. J.	UNIV MICH-ANN ARBOR	NSG 5044	Weil, H.	31	2507
GSFC	Wexler, R.	UNIV MICH-ANN ARBOR	NSR 23-005-376	Bartman, F. L.	31	2511
GSFC	Unavailable	UNIV MICH-ANN ARBOR	S-54214A	Unavailable	31	2512
GSFC	Staff, W. O.	U MINN-MNPLS-ST PAUL	NAS 5-3838	Epney, O.	13	2524
GSFC	Sizemore, K. O.	U MINN-MNPLS-ST PAUL	NAS 5-11173	Cahill, L. J., Jr.	49	2525
GSFC	White, C. E.	U MINN-MNPLS-ST PAUL	NAS 5-11310	Kellogg, P. J.	11	2526
GSFC	Findlay, J. A.	U MINN-MNPLS-ST PAUL	NAS 5-11438	Nier, A. O.	31	2527
GSFC	Wainscott, F. H.	U MINN-MNPLS-ST PAUL	NAS 5-11687	Winckler, J. R.	49	2528
GSFC	Davis, M. A.	U MINN-MNPLS-ST PAUL	NAS 5-20837	Kellogg, P. J.	13	2529
GSFC	Curran, R. J.	UNIV MO-COLUMBIA	NAS 5-20818	Schuster, B. G.	31	2583
GSFC	Poland, W. B., Jr.	UNIV MO-COLUMBIA	NAS 5-20826	Noack, T. L.	45	2584
GSFC	Flatley, T. W.	UNIV MO-ROLLA	NGR 26-003-069	Taylor, J. M.	49	2593
GSFC	Szajna, E. F.	UNIV NEBRASKA-LINCLN	NAS 5-20814	Carlson, M.	49	2613
GSFC	Freden, S. C.	UNIV NEBRASKA-LINCLN	NAS 5-21756	Drew, J. V.	39	2614
GSFC	Kalet, M. W.	UNIV NEBRASKA-LINCLN	NAS 5-23125	Samson, J. A.	13	2615
GSFC	Kupperian, J. E.	UNIV NEBRASKA-LINCLN	NGR 28-004-028	Gallagher, J. S.	11	2620
GSFC	Rango, A.	UNIV OF NEVADA-RENO	NAS 5-20954	Squires, P.	39	2621
GSFC	Teegarden, B. J.	UNIV NEW HAMPSHIRE	NAS 5-11276	Webber, W. R.	11	2631
GSFC	Wales, R. O.	UNIV NEW HAMPSHIRE	NAS 5-11694	Arnoldy, R. L.	11	2632
GSFC	Trombka, J. I.	UNIV NEW HAMPSHIRE	NAS 5-20714	Chupp, E. L.	13	2633

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GSFC	Orwig, L. E.	UNIV NEW HAMPSHIRE	NAS 5-20884	Chupp, E. L.	13	2634
GSFC	Donley, J. L.	UNIV NEW HAMPSHIRE	NAS 5-22342	Chupp, E. L.	11	2635
GSFC	Hyder, C. L.	UNIV OF NEW MEXICO	NCA 5-31	Regener, V. H.	31	2719
GSFC	Jones, H. P.	UNIV OF NEW MEXICO	NCA 5-32	Regener, V. H.	31	2720
GSFC	Hyder, C. L.	UNIV OF NEW MEXICO	NCA 5-33	Regener, V. H.	31	2721
GSFC	Hyder, C. L.	UNIV OF NEW MEXICO	NCA 5-34	Regener, V. H.	31	2722
GSFC	Unavailable	UNIV OF NEW MEXICO	NCA 5-36	Unavailable	31	2723
GSFC	Temkin, A.	UNIV OF NEW MEXICO	NCA 5-41	Beckel, C. L.	13	2724
GSFC	Lynch, T. J.	UNIV OF NOTRE DAME	NGL 15-004-026	Massey, J. L.	45	2067
GSFC	Lynch, T. J.	UNIV OF NOTRE DAME	NSG 5025	Massey, J. L.	45	2072
GSFC	Taylor, R. E.	UNIV OF PENNSYLVANIA	NAS 5-20707	Showers, R. M.	41	3143
GSFC	Durrani, S. H.	UNIV OF PENNSYLVANIA	NSG 5064	Berkowitz, R. S.	45	3146
GSFC	Christie, C. J.	UNIV OF PERU	NASW 7	Unavailable	49	3729
GSFC	Temkin, A.	UNIV OF PITTSBURGH	NGL 39-011-035	Gerjuoy, E.	13	3155
GSFC	Hallam, K. L.	UNIV OF RHODE ISLAND	NAS 5-23173	Choudry, A.	19	3178
GSFC	Osantowski, J. F.	UNIV OF ROCHESTER	NAS 5-20028	Baumeister, P. W.	13	2922
GSFC	Kupperian, J. E.	UNIV OF ROCHESTER	NSG 5054	Savedoff, M. P.	11	2926
GSFC	Kutz, R. L.	UNIV OF SOUTHERN CAL	NAS 5-21505	Davisson, L. D.	45	1645
GSFC	Kutz, R. L.	UNIV OF SOUTHERN CAL	NGL 05-018-118	Davisson, L. D.	45	1652
GSFC	Kunde, V. G.	UNIV TENNESSEE-KNOXV	NAS 5-20672	Fox, K.	31	3210
GSFC	Velez, C. E.	UNIV TENNESSEE-KNOXV	NGR 43-001-144	Feagin, T.	21	3224
GSFC	Schaefer, D. H.	UNIV TENNESSEE-KNOXV	NSG 5002	Bodenheimer, R. E.	21	3229
GSFC	Velez, C. E.	UNIV TENNESSEE-KNOXV	NSG 5040	Feagin, T.	49	3230
GSFC	Allen, W. K.	UNIV TENNESSEE-MEMPHIS	NAS 5-22495	Rochelle, R. W.	31	3232
GSFC	Fuchs, A. J.	UNIV TEXAS-AUSTIN	NAS 5-20946	Tapley, B. D.	49	3366
GSFC	Hirschmann, E.	UNIV TEXAS-AUSTIN	NAS 5-21982	Straiton, A. W.	45	3367
GSFC	Velez, C. E.	UNIV TEXAS-AUSTIN	NGR 44-012-255	Nacozy, P. E.	21	3393
GSFC	Sobieski, S.	UNIV TEXAS-AUSTIN	NGR 44-012-260	Tull, R. G.	11	3395
GSFC	Sobieski, S.	UNIV TEXAS-AUSTIN	NGR 44-012-261	Nather, R. E.	11	3396
GSFC	Sobieski, S.	UNIV TEXAS-AUSTIN	NGR 44-012-263	Angel, J. R.	11	3397
GSFC	Fuchs, A. J.	UNIV TEXAS-AUSTIN	NGR 44-012-269	Tapley, B. D.	49	3398
GSFC	Marsh, J. G.	UNIV TEXAS-AUSTIN	NGR 44-012-283	Tapley, B. D.	32	3401
GSFC	Kupperian, J. E.	UNIV TEXAS-AUSTIN	NSG 5005	Lambert, D. L.	11	3404
GSFC	Kupperian, J. E.	UNIV TEXAS-AUSTIN	NSG 5031	Parsons, S. B.	11	3405
GSFC	Findlay, J. A.	UNIV TEXAS-DALLAS	NAS 5-11406	Hansen, W. B.	31	3410
GSFC	Findlay, J. A.	UNIV TEXAS-DALLAS	NAS 5-11407	Hoffman, R.	31	3411
GSFC	Kupperian, J. E.	UNIV OF TOLEDO	NGR 36-010-031	Molnar, M. R.	11	3048
GSFC	Kupperian, J. E.	UNIV OF TOLEDO	NSG 5006	Molnar, M. R.	11	3050
GSFC	Broderick, J.	UNIV OF UTAH	NAS 5-20955	Nackowski, M.	32	3451
GSFC	Kelsall, T. N.	UNIV OF VIRGINIA	NAS 5-20065	Frederick, L. W.	11	3563
GSFC	Crump, E. W.	UNIV OF VIRGINIA	NAS 5-20999	Dolan, R.	39	3564
GSFC	Leckrone, D. S.	UNIV OF VIRGINIA	NAS 5-22346	Oconnell, R. W.	11	3565
GSFC	Sobieski, S.	UNIV OF VIRGINIA	NGR 47-005-204	Frederick, L. W.	11	3576
GSFC	Underhill, A. B.	UNIV OF WASHINGTON	NAS 5-22379	Bohm-Vitense, E.	11	3634
GSFC	Treon, S. L.	UNIV OF WASHINGTON	NGR 48-002-125	Leovy, C. B.	31	3646
GSFC	Kupperian, J. E.	UNIV OF WASHINGTON	NGR 48-002-166	Wallerstein, G.	11	3654
GSFC	Theon, J. S.	UNIV OF WASHINGTON	NSG 5039	Leovy, C. B.	31	3655
GSFC	Donley, J. L.	UNIV WISC-MADISON	NAS 5-11361	Kraushaar, W. L.	31	3672
GSFC	Oberright, J. E.	UNIV WISC-MADISON	NAS 5-20068	Dombrowski, R. M.	49	3673
GSFC	White, A.	UNIV WISC-MADISON	NAS 5-20973	Code, A. D.	11	3674
GSFC	Squires, R. K.	UNIV WISC-MADISON	NAS 5-20974	Suomi, V. E.	13	3675
GSFC	Wexler, R.	UNIV WISC-MADISON	NAS 5-21798	Bottino, M. L.	31	3676
GSFC	Moody, J. C.	UNIV WISC-MADISON	NAS 5-21965	Suomi, V. E.	31	3677
GSFC	Leckrone, D. S.	UNIV WISC-MADISON	NAS 5-22349	Anderson, C. M.	11	3678
GSFC	White, R. A.	UNIV WISC-MADISON	NAS 5-22410	Kraushaar, W. L.	31	3679
GSFC	Sobieski, S.	UNIV WISC-MADISON	NAS 5-23285	Bless, R. C.	11	3680
GSFC	Greaves, J. R.	UNIV WISC-MADISON	NAS 5-23296	Suomi, V. E.	31	3681
GSFC	Halem, M.	UNIV WISC-MADISON	NGR 50-002-215	Suomi, V. E.	31	3696

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
GSFC	Sobieski, S.	UNIV WISC-MADISON	NGR 50-002-223	Roesler, F. L.	11	3697
GSFC	Hobbs, R. W.	UNIV WISC-MADISON	NGR 50-002-242	Roesler, F. L.	11	3698
GSFC	Gordon, F., Jr.	UNIV OF WYOMING	NAS 5-21799	Houston, R. S.	32	3710
GSFC	Gordon, F., Jr.	UNIV OF WYOMING	NAS 5-21818	Houston, R. S.	32	3711
GSFC	Hirschmann, E.	VIRGINIA POLY INST	NAS 5-21984	Bostian, C. W.	45	3594
GSFC	Hirschmann, E.	VIRGINIA POLY INST	NGR 47-004-091	Bostian, C. W.	45	3601
GSFC	Fedor, J. V.	VIRGINIA POLY INST	NGR 47-004-098	Meirovitch, L.	42	3602
GSFC	Hrastar, J. A.	VIRGINIA POLY INST	NGR 47-004-100	Meirovitch, L.	49	3603
GSFC	Fedor, J. V.	VIRGINIA POLY INST	NGR 47-004-126	Meirovitch, L.	11	3608
GSFC	Ehrmann, C. H.	WASHINGTON TECH INST	NAS 5-22383	Boyd, P.	45	1824
GSFC	Hobbs, R. W.	WASHINGTON TECH INST	NCA 5-40	Kasten, A.	11	1825
GSFC	Ehrmann, C. H.	WASHINGTON TECH INST	NGR 09-059-002	Brach, P.	45	1826
GSFC	Quann, J. J.	WASHINGTON UNIVERSITY	NAS 5-20680	Morgan, R. P.	99	2598
GSFC	Sobieski, S.	YALE UNIVERSITY	NAS 5-20841	Schuster, B. G.	11	1749
GSFC	Schaefer, D. H.	YALE UNIVERSITY	NGL 07-004-005	Barker, R. C.	45	1750
GSFC	Snowden, L. O.	YALE UNIVERSITY	NGL 07-004-035	Lamb, W. E., Jr.	12	1751
GSFC	Hansen, J. E.	YESHIVA UNIVERSITY	NGL 33-023-018	Cameron, A. G.	11	2928
JPL	Trajmar, S.	FLORIDA A&M UNIV	NSG 901	Jones, H. W.	13	1830
JPL	Moynihan, P. I.	NO CAR A&T STATE U	NGR 34-012-013	Craft, W. J.	47	2941
JPL	Huntress, W. T.	PAN AMERICAN UNIV	NGR 44-087-002	Glaser, F. M.	32	3263
JPL	Estabrook, F. B.	SO UNIV-BATON ROUGE	NGR 19-005-006	Chakkalakal, D. A.	11	2171
JSC	Harris, J. W.	ARIZONA STATE UNIV	NGR 03-001-057	Moore, C. B.	12	1098
JSC	Leach, C. S.	BAYLOR COL OF MED	NAS 9-10537	Campbell, B. O.	52	3239
JSC	Leach, C. S.	BAYLOR COL OF MED	NAS 9-11201	Johnson, P. C.	59	3240
JSC	Smith, M. C., Jr.	BAYLOR COL OF MED	NAS 9-12728	Nichols, B. L.	53	3241
JSC	Shumate, W. H.	BAYLOR COL OF MED	NAS 9-13452	Roessler, R.	53	3242
JSC	Leach, C. S.	BAYLOR COL OF MED	NAS 9-13540	Di Ferrante, N.	59	3243
JSC	Smith, M. C., Jr.	BAYLOR COL OF MED	NAS 9-13737	Johnson, P. C.	53	3244
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NAS 9-14322	Criswell, B. S.	52	3245
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NAS 9-14368	Rich, R. R.	53	3246
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NAS 9-14406	Martin, R. R.	53	3247
JSC	Kaplan, H. L.	BAYLOR COL OF MED	NAS 9-14407	Duncan, W. C.	52	3248
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NAS 9-14468	Criswell, B. S.	53	3249
JSC	Homick, J. L.	BAYLOR COL OF MED	NAS 9-14546	Igarashi, M.	51	3250
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NAS 9-14603	Gentry, L. O.	53	3251
JSC	Rummel, J. A.	BAYLOR COL OF MED	NAS 9-14661	Cardus, D.	53	3252
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NAS 9-14662	Johnson, P. C.	52	3253
JSC	Leach, C. S.	BAYLOR COL OF MED	NAS 9-14715	Suki, W. N.	59	3254
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NGR 44-003-053	Nichols, B. L.	52	3255
JSC	Hoffler, G. W.	BOSTON UNIVERSITY	NGR 22-004-021	Chobanion, A. V.	52	2291
JSC	Phinney, W. C.	BRIGHAM YOUNG UNIV	NAS 9-14499	Ladle, G. H.	32	3444
JSC	Harris, J. W.	BROWN UNIVERSITY	NGR 40-002-123	Rutherford, M. J.	32	3175
JSC	Hoffman, R. A.	BRYN MAWR COLLEGE	NAS 9-14640	Oppenheimer, J. M.	51	3085
JSC	Harris, J. W.	BRYN MAWR COLLEGE	NSG 9005	Crawford, M. L.	13	3086
JSC	Harris, J. W.	CALIF INST OF TECH	NGL 05-002-187	Silver, L. T.	12	1204
JSC	Harris, J. W.	CALIF INST OF TECH	NGL 05-002-188	Wasserburg, G. J.	12	1205
JSC	Harris, J. W.	CALIF INST OF TECH	NGL 05-002-190	Epstein, S.	13	1206
JSC	Harris, J. W.	CALIF INST OF TECH	NGL 05-002-338	Albee, A. L.	13	1209
JSC	Harris, J. W.	CALIF INST OF TECH	NGR 05-002-333	Tombrello, T. A.	13	1228
JSC	Harris, J. W.	CALIF INST OF TECH	NSG 9019	Harger, R. O.	19	1241
JSC	Harris, J. W.	CASE WESTERN RESERVE	NGL 36-027-057	Radcliffe, S. V.	12	2977
JSC	Byrns, Z. H.	CITY COLLEGE OF N Y	NAS 9-13642	Pierson, W. J.	13	2743
JSC	Batson, B. H.	CITY COLLEGE OF N Y	NAS 9-13940	Schilling, D. L.	45	2744
JSC	Reveley, W. F.	CLEMSON UNIV-CLEMSON	NAS 9-13669	Gaddis, J. L.	46	3181
JSC	Barnett, T. L.	CLEMSON UNIV-CLEMSON	NAS 9-14006	Haun, J. R.	39	3182
JSC	Hoffman, R. A.	COLLEGE OF WM & MARY	NGR 47-006-054	Aceto, H., Jr.	51	3484
JSC	Miller, M. L.	COLORADO SCH OF MINE	NAS 9-13394	Lee, K.	32	1659
JSC	Barnett, T. L.	COLORADO STATE UNIV	NAS 9-14467	Smith, J. A.	39	1670

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JSC	Hoffman, R. A.	COLORADO STATE UNIV	NGR 06-002-128	Lett, J. T.	51	1680
JSC	Eichelman, W. F.	COLUMBIA UNIVERSITY	NAS 9-6037	Langseth, M. G.	19	2764
JSC	Harris, J. W.	COLUMBIA UNIVERSITY	NGR 33-008-169	Horai, K.	13	2770
JSC	Harris, J. W.	COLUMBIA UNIVERSITY	NGR 33-008-177	Horai, K.	13	2771
JSC	Harris, J. W.	COLUMBIA UNIVERSITY	NGR 33-008-199	Ridley, W. I.	12	2776
JSC	Harris, J. W.	COLUMBIA UNIVERSITY	NSG 9025	Schreiber, E.	32	2784
JSC	Joosten, R. E.	CORNELL UNIVERSITY	NAS 9-13364	Hardy, E. E.	39	2792
JSC	Harris, J. W.	CORNELL UNIVERSITY	NGR 33-010-137	Gold, T.	13	2807
JSC	Miller, M. L.	DARTMOUTH COLLEGE	NAS 9-13311	Stoieber, R. E.	32	2625
JSC	Leach, C. S.	DARTMOUTH COLLEGE	NAS 9-14439	Galton, V. A.	53	2626
JSC	Harris, J. W.	DUKE UNIVERSITY	NGR 34-001-054	Cocks, F. H.	13	2935
JSC	Harris, J. W.	FAIRLEIGH-DICKNSON U	NGL 31-006-011	Adams, J. B.	13	2642
JSC	Hoffman, R. A.	GRAMBLING STATE UNIV	NSG 9014	Foster, B. R.	13	2161
JSC	Rummel, J. A.	HARDING COLLEGE	NAS 9-14134	Olree, H. D.	52	1174
JSC	Smith, M. C., Jr.	HARVARD UNIVERSITY	NAS 9-13370	Hegsted, D. M.	59	2306
JSC	Harris, J. W.	HARVARD UNIVERSITY	NGL 22-007-247	Hays, J. F.	12	2311
JSC	Kondo, Y.	HOUSTON BAPTIST UNIV	NGR 44-081-001	Modisette, J. L.	11	3259
JSC	Kondo, Y.	HOUSTON BAPTIST UNIV	NGR 44-081-005	Modisette, J. L.	11	3260
JSC	Potter, A. E.	HOUSTON BAPTIST UNIV	NSG 9007	Modisette, J. L.	13	3261
JSC	Savely, R. T.	HOWARD UNIVERSITY	NSG 9010	Choudhury, A. K.	45	1823
JSC	Harris, J. W.	INDIANA U-BLOOMINGTN	NGR 15-003-105	Meinschein, W. G.	12	2036
JSC	Hardee, S. N.	JOHNS HOPKINS UNIV	NAS 9-11528	Fastie, W. G.	13	2205
JSC	Harris, J. W.	JOHNS HOPKINS UNIV	NSG 9004	Henry, R. C.	13	2215
JSC	Pitts, D. E.	KANSAS STATE UNIV	NAS 9-14282	Feyerherm, A. M.	39	2102
JSC	Barnett, T. L.	KANSAS STATE UNIV	NAS 9-14533	Feyerherm, A. M.	39	2103
JSC	Harris, J. W.	LEHIGH UNIVERSITY	NGR 39-007-056	Goldstein, J. I.	12	3102
JSC	Kondo, Y.	LEHIGH UNIVERSITY	NGR 39-007-061	McCluskey, G. E., Jr.	11	3103
JSC	Harris, J. W.	LEHIGH UNIVERSITY	NGR 39-007-064	Slar, C. B.	13	3104
JSC	York, L. B.	LONG ISLAND UNIV	NAS 9-13308	Yost, E.	19	2829
JSC	Rummel, J. A.	UNIV OF NEW ORLEANS	NAS 9-12941	Laseter, J. L.	51	2186
JSC	Giuli, R. T.	LA STATE U-SHREVEPT	NAS 9-9317	Moss, T. A.	11	2169
JSC	Eichelman, W. F.	MASS INST OF TECH	NAS 9-12334	Press, F.	31	2353
JSC	Heidelbaugh, N. D.	MASS INST OF TECH	NAS 9-12485	Flink, J. M.	53	2354
JSC	Harris, J. W.	MASS INST OF TECH	NGR 22-009-540	Simmons, M. G.	13	2381
JSC	Harris, J. W.	MASS INST OF TECH	NGR 22-009-551	Burns, R. G.	12	2382
JSC	Harris, J. W.	MASS INST OF TECH	NGR 22-009-646	Uhlmann, D. R.	47	2385
JSC	Shack, P. E.	MEMPHIS ST UNIV	NAS 9-13878	Morris, C. F.	45	3200
JSC	Homick, J. L.	MIAMI UNIVERSITY	NAS 9-14538	Parker, D. E.	59	3003
JSC	Forbes, C. D.	MICHIGAN STATE UNIV	NAS 9-13332	Manderscheid, L.	13	2455
JSC	Forbes, C. D.	MISSISSIPPI STATE U	NAS 9-13363	Bouchillon, C. W.	99	2567
JSC	Fenner, R. G.	NEW MEX ST U-LAS CR	NAS 9-95435	Henry, D. G.	39	2703
JSC	Fenner, R. G.	NEW MEX ST U-LAS CR	NAS 9-95451	Henry, D. G.	39	2704
JSC	Henize, K. G.	NORTHWESTERN UNIV	NAS 9-12280	Telford, J. W.	11	1959
JSC	Juday, R. D.	OAKLAND UNIVERSITY	NAS 9-14195	Haskell, R. E.	21	2460
JSC	French, B. O.	OLD DOMINION UNIV	NAS 9-13410	Keshock, E. G.	46	3509
JSC	Harris, J. W.	OREGON STATE UNIV	NGL 38-002-039	Schmitt, R. A.	13	3076
JSC	Potter, A. E.	PAN AMERICAN UNIV	NSG 9015	Lemaster, E. W.	39	3264
JSC	Miller, M. L.	PENNSYLVANIA STATE U	NAS 9-13406	McMurtry, G. J.	32	3116
JSC	Homick, J. L.	PENNSYLVANIA STATE U	NGR 39-009-204	Kales, A.	59	3129
JSC	Potter, A. E.	PRAIRIE VIEW A&M U	NSG 9006	Sohel, M. S.	39	3267
JSC	Williams, R. J.	PRAIRIE VIEW A&M U	NSG 9018	Stubblefield, C. T.	12	3268
JSC	Miller, M. L.	PRESCOTT COLLEGE	NAS 9-13342	Gumerman, G. J.	32	1101
JSC	Harris, J. W.	PRINCETON UNIVERSITY	NGL 31-001-283	Hollister, L. S.	11	2661
JSC	Joosten, R. E.	PURDUE UNIVERSITY	NAS 9-13301	Silva, L. F.	39	2046
JSC	Joosten, R. E.	PURDUE UNIVERSITY	NAS 9-13380	Hoffer, R. M.	39	2047
JSC	Potter, A. E.	PURDUE UNIVERSITY	NAS 9-14016	Landgrebe, D. A.	39	2048
JSC	Harris, J. W.	PURDUE UNIVERSITY	NGL 15-005-175	Taylor, L. A.	13	2052
JSC	Harris, J. W.	PURDUE UNIVERSITY	NGR 15-005-157	Meyer, H. O.	13	2057

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JSC	Harris, J. W.	QUEENS COLLEGE	NSG 9022	Coch, N. K.	32	2864
JSC	Eichelman, W. F.	RICE UNIVERSITY	NAS 9-5911	Freeman, J. W.	13	3273
JSC	Eichelman, W. F.	RICE UNIVERSITY	NAS 9-10428	Low, F. J.	39	3274
JSC	Kissinger, L. D.	RICE UNIVERSITY	NAS 9-11827	Davis, S. H.	43	3275
JSC	Baker, K.	RICE UNIVERSITY	NAS 9-12776	Lynn, M. S.	21	3276
JSC	Zieglschmid, J. F.	RICE UNIVERSITY	NAS 9-12912	Ward, C. H.	51	3277
JSC	Harris, J. W.	RICE UNIVERSITY	NGL 44-006-127	Heymann, D.	32	3281
JSC	Harris, J. W.	RICE UNIVERSITY	NGR 44-006-142	Powell, B. N.	32	3283
JSC	Hudson, R. D.	RICE UNIVERSITY	NGR 44-006-156	Stebbins, R. F.	13	3284
JSC	Forbes, C. D.	SO DAKOTA STATE UNIV	NAS 9-13337	Myers, V. I.	19	3195
JSC	Miller, M. L.	SO ILL UNIV-CARBONDL	NAS 9-14610	Gummerman, G. J.	32	1972
JSC	Curry, D. M.	SO UNIV-BATON ROUGE	NSG 9001	Chehl, S. S.	19	2176
JSC	Echelkamp, R. E.	SO UNIV-BATON ROUGE	NSG 9030	Grewal, G. S.	45	2177
JSC	Eichelman, W. F.	STANFORD UNIVERSITY	NAS 9-5632	Kovach, R. L.	32	1318
JSC	Leach, C. S.	STANFORD UNIVERSITY	NAS 9-14716	Davidson, J. M.	59	1319
JSC	Rummel, J. A.	STANFORD UNIVERSITY	NGR 05-020-632	Lederberg, J.	53	1373
JSC	Rummel, J. A.	STATE UNIV NY-ALBANY	NSG 9028	Farhi, L. E.	51	2886
JSC	Harris, J. W.	STATE UNIV NY-BUFFAL	NGL 33-183-013	Cadenhead, D. A.	12	2891
JSC	Hardee, S. N.	ST U NY COL-GENESE	NAS 9-12770	Young, R. S.	32	2917
JSC	Harris, J. W.	STATE U NY-STONY BRK	NGL 33-015-130	Papike, J. J.	13	2897
JSC	Harris, J. W.	STATE U NY-STONY BRK	NGL 33-015-174	Schaeffer, O. A.	12	2898
JSC	Harris, J. W.	STATE U NY-STONY BRK	NSG 9013	Hartwig, J. B.	32	2914
JSC	Leach, C. S.	ST U NY-UPST MED CTR	NAS 9-11846	Miller, M.	59	2916
JSC	Smith, M. C., Jr.	TEXAS A&M UNIVERSITY	NAS 9-12434	Burns, E. E.	59	3307
JSC	Hoffman, R. A.	TEXAS A&M UNIVERSITY	NAS 9-13647	Kuchnow, K. P.	51	3308
JSC	Pitts, D. E.	TEXAS A&M UNIVERSITY	NAS 9-13894	Guseman, L. D.	21	3309
JSC	Potter, A. E.	TEXAS A&M UNIVERSITY	NAS 9-13904	Rouse, J. W., Jr.	39	3310
JSC	Potter, A. E.	TEXAS A&M UNIVERSITY	NAS 9-14197	Rouse, J. L.	39	3311
JSC	Clark, R. S.	TEXAS A&M UNIVERSITY	NAS 9-14429	Randall, J.	13	3312
JSC	Potter, A. E.	TEXAS A&M UNIVERSITY	NAS 9-14470	Harlan, C.	39	3313
JSC	Hillje, E. R.	TEXAS A&M UNIVERSITY	NAS 9-14478	Cavin, R. K., III	41	3314
JSC	Nitschke, H. A.	TEXAS A&M UNIVERSITY	NAS 9-14493	Schell, J. A.	49	3315
JSC	McKain, G. E.	TEXAS A&M UNIVERSITY	NAS 9-14514	Simmons, R.	39	3316
JSC	Nolin, F. D.	TEXAS A&M UNIVERSITY	NAS 9-14556	Guseman, L. F., Jr.	21	3317
JSC	Zeitler, E.	TEXAS A&M UNIVERSITY	NAS 9-14583	Shepard, P. J.	39	3318
JSC	Baker, K.	TEXAS A&M UNIVERSITY	NAS 9-14689	Guseman, L. F., Jr.	21	3319
JSC	Shields, V.	TEXAS SOUTHERN UNIV	NSG 9029	Wilson, R. F.	43	3328
JSC	Day, J. L.	TEXAS TECH UNIV	NAS 9-11162	Portnoy, W. M.	45	3329
JSC	Day, J. L.	TEXAS TECH UNIV	NAS 9-14438	Portnoy, W. M.	53	3330
JSC	Jackson, M. M.	TUFTS UNIVERSITY	NGR 22-012-026	Spodick, D. H.	53	2440
JSC	French, B. O.	TUSKEGEE INSTITUTE	NAS 9-13844	Sellers, J. P.	46	1035
JSC	Baldwin, R. R.	UNIV ALASKA-FAIRBNKS	NAS 9-13945	Wescott, E. M.	32	1090
JSC	Baker, B. R.	UNIV ALASKA-FAIRBNKS	NAS 9-14645	Davis, T. N.	11	1091
JSC	Kimsey, S. L.	UNIV OF ARIZONA	NAS 9-14692	Bartels, P. H.	59	1120
JSC	Harris, J. W.	UNIV OF ARIZONA	NGR 03-002-388	Drake, M. J.	12	1155
JSC	Potter, A. E.	UNIV ARKANSAS-FAYETV	NAS 9-14251	Waite, W. P.	19	1176
JSC	Hardee, S. N.	U ARKANSAS-MONTICELLO	NAS 9-13196	Dehon, R. A.	13	1180
JSC	Potter, A. E.	U ARKANSAS-PINE BLUF	NSG 9002	Davis, L. A., Jr.	39	1182
JSC	Golden, R. L.	UNIV CALIF-BERKELEY	NAS 9-7801	Alvarez, L. W.	31	1418
JSC	Sanders, J. M.	UNIV CALIF-BERKELEY	NAS 9-13799	Bowyer, C. S.	11	1419
JSC	Sanders, J. M.	UNIV CALIF-BERKELEY	NAS 9-13807	Bowyer, C. S.	11	1420
JSC	Forbes, C. D.	UNIV CALIF-BERKELEY	NAS 9-14419	Colwell, R. N.	39	1421
JSC	Forbes, C. D.	UNIV CALIF-BERKELEY	NAS 9-14420	Colwell, R. N.	39	1422
JSC	Erb, R. B.	UNIV CALIF-BERKELEY	NAS 9-14452	Lauer, D.	39	1423
JSC	Dietrich, J. W.	UNIV CALIF-BERKELEY	NAS 9-14565	Nichols, J. D.	39	1424
JSC	Harris, J. W.	UNIV CALIF-BERKELEY	NGL 05-003-409	Reynolds, J. H.	13	1440
JSC	Harris, J. W.	UNIV CALIF-BERKELEY	NGL 05-003-410	Price, P. B.	12	1441
JSC	Harris, J. W.	UNIV CALIF-BERKELEY	NGR 05-003-435	Burlingame, A. L.	13	1448

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JSC	Smith, M. C., Jr.	UNIV CALIF-DAVIS	NAS 9-13589	Vogel, J. M.	52	1475
JSC	Hardee, S. N.	UNIV CALIF-L ANGELES	NAS 9-12757	Ukanwa, A. O.	13	1504
JSC	Harris, J. W.	UNIV CALIF-L ANGELES	NGL 05-007-287	Wetherill, G. W.	13	1518
JSC	Harris, J. W.	UNIV CALIF-L ANGELES	NGL 05-007-330	Warren, N.	13	1519
JSC	Harris, J. W.	UNIV CALIF-L ANGELES	NGL 05-007-367	Wasson, J. T.	12	1520
JSC	Harris, J. W.	UNIV CALIF-L ANGELES	NGR 05-007-289	Kaplan, I. R.	13	1527
JSC	Harris, J. W.	UNIV CALIF-SAN DIEGO	NGL 05-009-148	Arnold, J. R.	12	1569
JSC	Harris, J. W.	UNIV CALIF-SAN DIEGO	NGL 05-009-150	Marti, K.	12	1570
JSC	Harris, J. W.	UNIV CALIF-SAN DIEGO	NGL 05-009-154	Arrhenius, G. O.	13	1571
JSC	Harris, J. W.	UNIV CALIF-S BARBARA	NGR 05-010-081	Tilton, G. R.	32	1609
JSC	Harris, J. W.	UNIV CALIF-S BARBARA	NSG 9020	Fuller, M. D.	19	1611
JSC	Harris, J. W.	UNIV OF CHICAGO	NGL 14-001-167	Anders, E.	13	1986
JSC	Harris, J. W.	UNIV OF CHICAGO	NGL 14-001-169	Clayton, R. N.	12	1987
JSC	Harris, J. W.	UNIV OF CHICAGO	NGL 14-001-171	Smith, J. V.	13	1988
JSC	Harris, J. W.	UNIV COLORADO-BOLDR	NGR 06-003-181	Larson, E. E.	13	1711
JSC	Harris, J. W.	UNIV OF DELAWARE	NGR 08-001-029	Glass, B. P.	13	1765
JSC	Smith, M. C., Jr.	UNIV OF HOUSTON	NAS 9-11676	Cox, J. E.	59	3332
JSC	Batson, B. H.	UNIV OF HOUSTON	NAS 9-11845	Simpson, R. S.	49	3333
JSC	Sullivan, L. J.	UNIV OF HOUSTON	NAS 9-12650	Jain, A. K.	79	3334
JSC	Baker, K.	UNIV OF HOUSTON	NAS 9-12777	Decell, H. P., Jr.	21	3335
JSC	Zieglschmid, J. F.	UNIV OF HOUSTON	NAS 9-13262	Cowles, J.	51	3336
JSC	Schneider, H. J.	UNIV OF HOUSTON	NAS 9-13457	Zlatkis, A.	52	3337
JSC	York, L. B.	UNIV OF HOUSTON	NAS 9-13462	Hayre, H. S.	19	3338
JSC	Golden, R. L.	UNIV OF HOUSTON	NAS 9-14209	Sheldon, W. R.	11	3339
JSC	Allen, J. P.	UNIV OF HOUSTON	NAS 9-14316	Eisner, M.	13	3340
JSC	Eggleston, J. M.	UNIV OF HOUSTON	NAS 9-14347	Michalopoulos, C. D.	42	3341
JSC	Homick, J. L.	UNIV OF HOUSTON	NAS 9-14384	Pitts, D. G.	59	3342
JSC	Downs, W. R.	UNIV OF HOUSTON	NAS 9-14516	Howell, J. R.	49	3343
JSC	Jackson, J. T.	UNIV OF HOUSTON	NAS 9-14532	Sheer, D. E.	42	3344
JSC	Schneider, H. J.	UNIV OF HOUSTON	NAS 9-14534	Zlatkis, A.	53	3345
JSC	Hay, D. H.	UNIV OF HOUSTON	NAS 9-14557	Decell, H. P., Jr.	21	3346
JSC	Schneider, H. J.	UNIV OF HOUSTON	NAS 9-14629	Zlatkis, A.	52	3347
JSC	Bailey, J. V.	UNIV OF HOUSTON	NAS 9-14652	Pinsky, L. S.	13	3348
JSC	Golden, R. L.	UNIV OF HOUSTON	NGL 44-005-041	Goodman, C.	13	3352
JSC	Eandi, B. K.	UNIV OF HOUSTON	NGL 44-005-090	Huang, C. J.	49	3354
JSC	Harris, J. W.	UNIV OF HOUSTON	NGL 44-005-184	King, E. A., Jr.	32	3355
JSC	White, D. R.	UNIV OF HOUSTON	NGR 44-005-137	Hildebrandt, A. F.	13	3360
JSC	Miller, M. L.	UNIV OF IOWA	NAS 9-13313	Hoppin, R. A.	32	2099
JSC	Hatcher, N. M.	UNIV OF KANSAS	NAS 9-10261	Ulaby, F. T.	39	2114
JSC	York, L. B.	UNIV OF KANSAS	NAS 9-13271	Yarger, H. L.	19	2115
JSC	Forbes, C. D.	UNIV OF KANSAS	NAS 9-13273	Eagleman, J. R.	19	2116
JSC	York, L. B.	UNIV OF KANSAS	NAS 9-13331	Moore, R. K.	19	2117
JSC	Pratt, B. W.	UNIV OF KANSAS	NAS 9-13347	Moore, R. K.	49	2118
JSC	Mason, C. C.	UNIV OF KANSAS	NAS 9-14052	Ulaby, F. T.	39	2119
JSC	Erb, R. B.	UNIV OF KANSAS	NAS 9-14453	Haralick, R. M.	39	2120
JSC	Jackson, M. M.	UNIV OF KENTUCKY	NAS 9-14392	Lafferty, J. F.	46	2143
JSC	Harris, J. W.	UNIV OF KENTUCKY	NGR 18-001-058	Ehmann, W. D.	13	2146
JSC	Hoffman, R. A.	UNIV OF LOUISVILLE	NAS 9-14632	Keefe, J. R.	51	2153
JSC	Eichelman, W. F.	UNIV MARYLAND-COL PK	NAS 9-5886	Weber, J.	19	2225
JSC	Harris, J. W.	UNIV OF MASS-AMHERST	NGL 22-010-089	Haggerty, S. E.	13	2446
JSC	Leach, C. S.	UNIV OF MIAMI	NGR 10-007-097	Epstein, M.	52	1869
JSC	Koons, F. D.	UNIV MICH-ANN ARBOR	NAS 9-14609	Anderson, J. G.	31	2480
JSC	Hudson, R. D.	UNIV MICH-ANN ARBOR	NGR 23-005-616	Cicerone, R. J.	31	2500
JSC	Stanley, J. F.	UNIV MICH-ANN ARBOR	NSG 9031	Anderson, J. G.	31	2510
JSC	Smith, M. C., Jr.	U MINN-MNPLS-ST PAUL	NAS 9-12560	Labuza, T. P.	59	2532
JSC	Harris, J. W.	U MINN-MNPLS-ST PAUL	NGL 24-005-225	Pepin, R. O.	13	2536
JSC	Harris, J. W.	U MINN-MNPLS-ST PAUL	NGR 24-005-223	Murthy, V. R.	13	2541
JSC	Harris, J. W.	U MINN-MNPLS-ST PAUL	NGR 24-005-248	Banerjee, S. K.	32	2542

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JSC	Ellis, W. E.	UNIV MO-COLUMBIA	NAS 9-12526	Winnick, J.	43	2586
JSC	Pummel, J. A.	UNIV MO-COLUMBIA	NAS 9-14369	Bryant, P. J.	59	2587
JSC	Smith, M. C., Jr.	UNIV NEBRASKA-LINCLN	NAS 9-11045	Hartung, T. E.	59	2616
JSC	Miller, M. L.	UNIV OF NEVADA-RENO	NAS 9-13274	Quade, J.	32	2624
JSC	Harris, J. W.	UNIV OF NEW MEXICO	NGL 32-004-063	Keil, K.	12	2727
JSC	Leach, C. S.	UNIV N CAR-CHPL HILL	NAS 9-14697	Gitelman, H. J.	59	2969
JSC	Pitts, D. E.	UNIV OKLAHOMA-NORMAN	NAS 9-13360	Sasaki, Y.	31	3069
JSC	Teegarden, D. L., Jr.	UNIV OREGON-EUGENE	NAS 9-9690	Blank, H. R.	32	3078
JSC	Harris, J. W.	UNIV OREGON-EUGENE	NGL 38-003-022	Weill, D. F.	13	3079
JSC	Horrigan, D. J.	UNIV OF PENNSYLVANIA	NSG 9011	Lambertson, C. J.	51	3148
JSC	Eichelman, W. F.	UNIV OF PITTSBURGH	NAS 9-13803	Donahue, T. M.	13	3150
JSC	Harris, J. W.	UNIV OF PITTSBURGH	NGL 39-011-160	Fuller, M.	13	3157
JSC	Bailey, J. V.	UNIV SAN FRANCISCO	NAS 9-12466	Benton, E. V.	51	1615
JSC	Taylor, G. R.	UNIV SAN FRANCISCO	NAS 9-14396	Benton, E. V.	51	1616
JSC	Unavailable	UNIV OF SOUTHERN CAL	NAS 9-6164	Unavailable	13	1648
JSC	Harris, J. W.	UNIV TENNESSEE-KNOXV	NGL 43-001-140	Taylor, L. A.	11	3220
JSC	Kaplan, H.	U TENNESSEE-MEMPHIS	NAS 9-13617	Autian, J.	53	3233
JSC	Potter, A. E.	UNIV TEXAS-AUSTIN	NAS 9-12568	Barnes, T. G., III	11	3373
JSC	Eichelman, W. F.	UNIV TEXAS-AUSTIN	NAS 9-13176	Henize, K. G.	11	3374
JSC	Goodrich, W. D.	UNIV TEXAS-AUSTIN	NAS 9-13680	Bertin, J. J.	41	3375
JSC	Fries, J.	UNIV TEXAS-AUSTIN	NAS 9-13865	Hickox, C. E.	46	3376
JSC	Eichelman, W. F.	UNIV TEXAS-AUSTIN	NAS 9-14405	Duennebier, F. D.	32	3377
JSC	Richard, R. R.	UNIV TEXAS-AUSTIN	NAS 9-14491	Hartwig, W. H.	49	3378
JSC	Eichelman, W. F.	UNIV TEXAS-AUSTIN	NAS 9-14581	Latham, G. V.	13	3379
JSC	Eandi, B. K.	UNIV TEXAS-AUSTIN	NGL 44-012-133	McKetta, J. J.	49	3383
JSC	Fedderson, W. E.	UNIV TEXAS-AUSTIN	NGR 44-012-224	Helmreich, A. L.	69	3390
JSC	Harris, J. W.	UNIV TEXAS-AUSTIN	NSG 9021	Gose, W. A.	32	3406
JSC	Eichelman, W. F.	UNIV TEXAS-DALLAS	NAS 9-12074	Hoffman, J. H.	19	3412
JSC	Baker, K.	UNIV TEXAS-DALLAS	NAS 9-13512	Odell, P. L.	21	3413
JSC	Harris, J. W.	UNIV TEXAS-DALLAS	NGR 44-004-116	Carter, J. L.	13	3418
JSC	Buchanan, P.	UNIV TEX-DENTAL BRCH	NAS 9-11118	Brown, L. R.	51	3428
JSC	Hordinsky, J. R.	UNIV TEX-DENTAL BRCH	NAS 9-14560	Shannon, I. L.	53	3429
JSC	Kimzey, S. L.	UNIV TEXAS-GALVESTON	NAS 9-13102	Lockhart, L. H.	53	3431
JSC	Eichelman, W. F.	UNIV TEXAS-GALVESTON	NAS 9-13143	Latham, G. V.	13	3432
JSC	Reschke, M. F.	UNIV TEXAS-GALVESTON	NAS 9-14641	Correia, M. J.	69	3433
JSC	Harris, J. W.	UNIV TEXAS-GALVESTON	NGR 44-088-008	Lindsay, J. F.	51	3435
JSC	Hoffler, G. W.	U TEX HEALTH CTR-SA	NGR 44-094-003	Earley, L. E.	53	3439
JSC	Leach, C. S.	U TEX HEALTH CTR-SA	NSG 9012	Morgan, W. W.	52	3440
JSC	Hoffler, G. W.	U TEX HEALTH CTR-DAL	NSG 9026	Blomquist, C. G.	52	3438
JSC	Lafferty, P. E.	UNIV OF UTAH	NAS 9-12168	Ward, S. H.	32	3456
JSC	Miller, M. L.	UNIV OF UTAH	NAS 9-13322	Jensen, M. L.	32	3457
JSC	Harris, J. W.	UNIV OF UTAH	NGR 45-003-090	Ward, S. H.	32	3461
JSC	Foreman, R. G.	UNIV OF UTAH	NGR 45-003-093	Folias, E. S.	21	3462
JSC	Harris, J. W.	UNIV OF UTAH	NSG 9024	Nash, W. P.	32	3468
JSC	Smith, M. C., Jr.	UNIV OF WASHINGTON	NAS 9-13029	Nelp, W. B.	59	3635
JSC	Horz, F.	UNIV OF WASHINGTON	NAS 9-13743	Brownlee, D. E.	32	3636
JSC	Harris, J. W.	UNIV OF WASHINGTON	NGR 48-002-149	Ghose, S.	13	3650
JSC	Waligora, J. M.	UNIV WISC-GREEN BAY	NSG 9017	Kaufman, W. C.	51	3666
JSC	Miller, M. L.	UNIV OF WYOMING	NAS 9-13298	Houston, R. S.	32	3712
JSC	Curry, D. M.	VIRGINIA POLY INST	NAS 9-12630	Lewis, C. H.	41	3597
JSC	Harris, J. W.	WASHINGTON UNIVERSTY	NGL 26-008-065	Walker, R. M.	13	2603
JSC	Hardee, S. N.	WOODSHOLE OCEAN INST	NAS 9-12563	Bowin, C.	32	2451
JSC	Hardee, S. N.	WOODSHOLE OCEAN INST	NAS 9-12564	Bryan, W. B.	32	2452
KSC	Hammond, T. M.	BETHUNE-COOKMAN COL	NGR 10-022-001	Poondi, P.	39	1827
KSC	Schehl, T. A.	FLORIDA A&M UNIV	NGR 10-010-002	Cottrell, P. T.	39	1828
KSC	Malone, J. E.	FLORIDA A&M UNIV	NSG 805	Harrell, B. E.	59	1829
KSC	Franks, H. H.	FLORIDA INST OF TECH	NAS10-8399	Bowman, T. E.	43	1832
KSC	Lee, W. H.	FLORIDA INST OF TECH	NGR 10-015-008	Nevin, T. A.	39	1833

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KSC	Lee, W. H.	FLORIDA TECH UNIV	NGR 10-019-004	Sweet, H. C.	39	1839
KSC	Lee, W. H.	FLORIDA TECH UNIV	NGR 10-019-009	Stout, I. J.	39	1840
KSC	Wright, M. I.	GEORGIA INST OF TECH	NAS10-8375	Webb, R. P.	45	1901
KSC	Morrison, J. D.	KENTUCKY STATE UNIV	NSG 801	Kloek, G.	59	2139
KSC	Bryan, C. J.	NM HIGHLANDS UNIV	NSG 804	Clark, R. D.	12	2694
KSC	Schlimmer, G. E.	NEW MEX ST U-LAS CR	NAS10-7399	Bumgarner, R. A.	45	2705
KSC	Unavailable	NEW MEX ST U-LAS CR	NAS10-8712	Unavailable	19	2706
KSC	Perkins, E. E.	SAVANNAH STATE COL	NSG 803	Ghuman, G. S.	39	1932
KSC	Bostwick, L. G.	SOUTHEASTN STATE COL	NSG 802	Robinson, J. L.	51	3064
KSC	Toft, P. D.	UNIV OF ARIZONA	NAS10-8518	Krider, E. P.	31	1122
KSC	Schnoor, R. H.	UNIV OF FLORIDA	NAS10-7791	Benson, C. D.	73	1842
KSC	Jorolan, A. E.	UNIV OF FLORIDA	NAS10-8051	Farber, E. A.	49	1843
KSC	Michalski, J. P.	UNIV OF FLORIDA	NAS10-8404	Bartholic, J. F.	31	1844
KSC	Toft, P. D.	UNIV OF FLORIDA	NAS10-8560	Bartholic, J. F.	39	1845
KSC	Toft, P. D.	UNIV OF FLORIDA	NAS10-8774	Bartholic, J. F.	39	1846
KSC	Toft, P. D.	UNIV OF FLORIDA	NGR 10-005-169	Uman, M. A.	31	1855
KSC	Bland, R. A.	UNIV OF MIAMI	NAS10-8498	Veziroglu, T. N.	39	1864
KSC	Bland, R. A.	UNIV OF MIAMI	NAS10-8740	Veziroglu, T. N.	39	1865
KSC	Bland, R. A.	UNIV OF MIAMI	NAS10-8795	Hirschberg, J. G.	39	1866
KSC	Jorolan, A. E.	UNIV OF SO CAROLINA	NAS10-8354	Bonnell, R. D.	43	3189
LARC	Johnson, R. W.	AMERICAN UNIVERSITY	NAS 1-12209	Anderson, R. R.	39	1767
LARC	Long, E. R., Jr.	AMERICAN UNIVERSITY	NGR 09-003-014	Cullen, E.	45	1769
LARC	Spearman, M. L.	AUBURN UNIV-AUBURN	NSG 1002	Greaux, A. E.	41	1030
LARC	Wilson, J. W.	BROOKLYN COLLEGE	NSG 1166	Franco, V.	13	2738
LARC	Cofer, W. R., III	BENNETT COLLEGE-NC	NSG 1032	Greaux, A. E.	12	2930
LARC	Yates, E. C., Jr.	BOSTON UNIVERSITY	NGR 22-004-030	Morino, L.	41	2295
LARC	Williams, T. S., Jr.	BROWN UNIVERSITY	NAS 1-9680	Mutch, T. A.	99	3168
LARC	Walker, G. H.	BROWN UNIVERSITY	NGR 40-002-093	Loferski, J. J.	13	3173
LARC	Maestrello, L.	BROWN UNIVERSITY	NSG 1076	Liu, J. T.	39	3176
LARC	Williams, T. S., Jr.	CALIF INST OF TECH	NAS 1-9703	Anderson, D. L.	39	1183
LARC	Williams, T. S., Jr.	CALIF INST OF TECH	NAS 1-12311	Horowitz, N. H.	51	1184
LARC	Davis, R. C.	CALIF INST OF TECH	NSG 1005	Babcock, C. D., Jr.	49	1231
LARC	Walker, G. H.	CARNEGIE-MELLON UNIV	NGR 39-087-021	Milnes, A. G.	13	3090
LARC	Stroud, W. J.	CASE WESTERN RESERVE	NGL 36-003-002	Kicher, T. P.	41	2974
LARC	Smith, R. E.	CASE WESTERN RESERVE	NSG 1069	Lynch, W. C.	99	2986
LARC	Exton, R. J.	CHESAPEAKE COLLEGE	NSG 1096	Paul, F. W.	33	2196
LARC	Morris, G. J.	CHRISTPHR NEWPRT COL	NAS 1-13423	Roby, A. B.	41	3477
LARC	Jewel, J. W., Jr.	CHRISTPHR NEWPRT COL	NAS 1-13913	Unavailable	41	3478
LARC	Morris, G. J.	CHRISTPHR NEWPRT COL	NAS 1-14034	Roby, A. B.	41	3479
LARC	Montgomery, R. C.	CITY COLLEGE OF N Y	NSG 1169	Mekel, R.	41	2750
LARC	Doggett, R. V., Jr.	CLEMSON UNIV-CLEMSON	NGR 41-001-027	Rudisill, C. S.	41	3183
LARC	Poe, C. C., Jr.	CLEMSON UNIV-CLEMSON	NSG 1104	Goree, J. G.	46	3185
LARC	Abel, I.	CLEMSON UNIV-CLEMSON	NSG 1125	Rudisill, C. S.	41	3186
LARC	Reichle, H. G., Jr.	CLEVELAND STATE UNIV	NSG 1030	Peters, L. K.	31	2999
LARC	Wilson, J. W.	COLLEGE OF WM & MARY	NAS 1-11808	Remler, E. A.	13	3480
LARC	Martin, D. J.	COLLEGE OF WM & MARY	NAS 1-11958	Aceto, H., Jr.	99	3481
LARC	Anderson, A. F.	COLLEGE OF WM & MARY	NGL 47-006-058	Rublein, G. T.	99	3483
LARC	Breckenridge, R. A.	COLLEGE OF WM & MARY	NSG 1089	Moriarity, J. A.	13	3486
LARC	Young, P. R.	COLLEGE OF WM & MARY	NSG 1095	Kranbuehl, D. E.	12	3487
LARC	Breckenridge, R. A.	COLLEGE OF WM & MARY	NSG 1173	Sher, A.	13	3488
LARC	Russell, J. M., III	COLLEGE OF WM & MARY	NSG 1203	Park, J. H.	31	3489
LARC	Cofer, W. R., III	COLLEGE OF WM & MARY	NSG 1204	Tyree, S. Y., Jr.	12	3490
LARC	Sweet, G. E.	COLORADO STATE UNIV	NAS 1-12106	Vonder Haar, T. H.	31	1661
LARC	Cooper, J. E.	COLORADO STATE UNIV	NAS 1-13501	Vonder Haar, T. H.	31	1662
LARC	Costen, R. C.	COLORADO STATE UNIV	NSG 1023	Sinclair, P. C.	31	1684
LARC	Costen, R. C.	COLORADO STATE UNIV	NSG 1215	Sinclair, P. C.	31	1685
LARC	Shepherd, W. T.	COLUMBIA UNIVERSITY	NAS 1-13663	Borsky, P. N.	62	2755
LARC	Shepherd, W. T.	COLUMBIA UNIVERSITY	NGL 33-008-118	Borsky, P. N.	62	2766

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LARC	Mixson, J. S.	COLUMBIA UNIVERSITY	NSG 1059	Vaicaitis, R.	41	2778
LARC	Gunn, W. J.	COLUMBIA UNIVERSITY	NSG 1115	Galanter, E.	69	2779
LARC	Powell, C. A.	COLUMBIA UNIVERSITY	NSG 1164	Borsky, P. N.	69	2780
LARC	Williams, T. S., Jr.	CORNELL UNIVERSITY	NAS 1-9683	Sagan, C. E.	99	2785
LARC	Allario, F.	CORNELL UNIVERSITY	NGL 33-010-064	Cool, T. A.	31	2798
LARC	Stephens, W. B.	CORNELL UNIVERSITY	NGL 33-010-070	Gallagher, R. H.	41	2799
LARC	Barger, R. L.	CORNELL UNIVERSITY	NGR 33-010-203	Seebass, A. R.	41	2817
LARC	Sweet, G. E.	DREXEL UNIVERSITY	NAS 1-11871	House, F. B.	31	3094
LARC	Snyder, W. J.	DUKE UNIVERSITY	NSG 1121	Dajani, J. S.	44	2936
LARC	Conway, E. J.	ELIZABETH CITY ST U	NSG 1179	Chatterjee, K. K.	12	2938
LARC	Williams, T. S., Jr.	FLORIDA STATE UNIV	NAS 1-9693	Hess, S. K.	32	1835
LARC	Hardin, J. C.	FLORIDA STATE UNIV	NSG 1021	Tam, C. K.	13	1838
LARC	Anderson, A. F.	GEORGE WASHINGTON U	NGL 09-010-053	Liebowitz, H.	49	1792
LARC	Margolis, K.	GEORGE WASHINGTON U	NGR 09-010-064	Liebowitz, H.	41	1793
LARC	Mulac, R. W.	GEORGE WASHINGTON U	NGR 09-010-074	Liebowitz, H.	41	1794
LARC	Anderson, R. A.	GEORGE WASHINGTON U	NGR 09-010-078	Liebowitz, H.	41	1795
LARC	Margolis, K.	GEORGE WASHINGTON U	NGR 09-010-085	Liebowitz, H.	41	1796
LARC	Swift, C. T.	GEORGE WASHINGTON U	NGR 09-010-096	Liebowitz, H.	45	1798
LARC	Callis, L. B., Jr.	GEORGE WASHINGTON U	NSG 1026	Liebowitz, H.	31	1799
LARC	Bailey, M. C.	GEORGE WASHINGTON U	NSG 1110	Liebowitz, H.	45	1800
LARC	Swann, R. T.	GEORGE WASHINGTON U	NSG 1155	Liebowitz, H.	47	1801
LARC	Suit, W. T.	GEORGE WASHINGTON U	NSG 1161	Liebowitz, H.	41	1802
LARC	Straeter, T. A.	GEORGE WASHINGTON U	NSG 1170	Maurer, W. D.	99	1803
LARC	Callis, L. B.	GEORGE WASHINGTON U	NSG 1216	Liebowitz, H.	31	1804
LARC	Williams, T. S., Jr.	GEORGIA INST OF TECH	NAS 1-13422	Hubbard, J. S.	51	1881
LARC	Peterson, J. P.	GEORGIA INST OF TECH	NGL 11-002-096	Horton, W. H.	41	1904
LARC	Evans, J. S.	GEORGIA INST OF TECH	NGR 11-002-157	Wu, J. C.	41	1906
LARC	Leybold, H. A.	GEORGIA INST OF TECH	NGR 11-002-169	Hanagud, S. V.	21	1907
LARC	Boatright, W. B.	GEORGIA INST OF TECH	NGR 11-002-177	Bangert, L. H.	41	1908
LARC	Hammond, C. E.	GEORGIA INST OF TECH	NGR 11-002-185	Pierce, G. A.	41	1910
LARC	Carter, J. E.	GEORGIA INST OF TECH	NSG 1004	Wu, J. C.	41	1911
LARC	Posey, J. W.	GEORGIA INST OF TECH	NSG 1047	Hadden, W. J., Jr.	13	1912
LARC	Hohl, F.	GEORGIA INST OF TECH	NSG 1168	Williams, J. R.	13	1913
LARC	Dibattista, J. D.	GEORGIA INST OF TECH	NSG 1200	Sheppard, A. P.	99	1914
LARC	Rogowski, R. S.	GREENVILLE COLLEGE	NSG 1097	Richards, R. R.	39	1955
LARC	Jewel, J. W., Jr.	HAMPTON INSTITUTE	NAS 1-12445	Williams, G. K.	41	3492
LARC	Singh, J. J.	HAMPTON INSTITUTE	NGR 47-020-008	Han, K. S.	13	3496
LARC	Catherines, J. J.	HAMPTON INSTITUTE	NSG 1011	Duncan, N. C.	69	3497
LARC	Jachimowski, C. J.	HAMPTON INSTITUTE	NSG 1086	Hunter, C. E.	12	3498
LARC	Katzberg, S. J.	HAMPTON INSTITUTE	NSG 1146	Trehan, A. K.	45	3499
LARC	Marushi, C. B.	HAMPTON INSTITUTE	NSG 1162	Sunshine, D. R.	49	3500
LARC	Soffen, G. A.	HARVARD UNIVERSITY	NAS 1-10492	McElroy, M. B.	31	2299
LARC	Swift, C. T.	HOFSTRA UNIVERSITY	NGR 33-209-002	Weissman, D. E.	45	2828
LARC	Kruszewski, E. T.	HOWARD UNIVERSITY	NSG 1130	Broome, T. H.	44	1819
LARC	Martz, C. W.	HOWARD UNIVERSITY	NSG 1181	Bainum, P. M.	41	1820
LARC	Beckwith, I. E.	ILL INST OF TECH	NSG 1120	Nagib, H. M.	41	1957
LARC	Dixon, S. C.	ISRAEL INST OF TECH	NGR 52-012-008	Haftka, R. T.	41	3724
LARC	Abel, I.	ISRAEL INST OF TECH	NSG 7072	Nissim, E.	41	3725
LARC	Bush, H. G.	ISRAEL INST OF TECH	NSG 7083	Weller, T.	41	3726
LARC	Illg, W.	LEHIGH UNIVERSITY	NGR 39-007-011	Erdogan, F.	21	3100
LARC	Poe, C. C., Jr.	LEHIGH UNIVERSITY	NSG 1178	Arin, K.	47	3106
LARC	Hinton, D. E.	MARQUETTE UNIVERSITY	NSG 1025	Nigro, N. J.	21	3665
LARC	Campbell, J. W.	MARY BALDWIN COLLEGE	NSG 1209	Sawyer, J. O.	21	3501
LARC	Williams, T. S., Jr.	MASS INST OF TECH	NAS 1-9684	Biemann, K.	39	2328
LARC	Williams, T. S., Jr.	MASS INST OF TECH	NAS 1-9691	Rich, A.	51	2329
LARC	Williams, T. S., Jr.	MASS INST OF TECH	NAS 1-9702	Shapiro, I. I.	99	2330
LARC	Kendall, B. M.	MASS INST OF TECH	NAS 1-10693	Staelin, D. H.	31	2331
LARC	Whitten, J. B.	MASS INST OF TECH	NGL 22-009-025	Young, L. R.	41	2362

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LARC	Reid, H. J., Jr.	MASS INST OF TECH	NGL 22-009-640	Simpson, R. W.	41	2371
LARC	Queijo, M. J.	MASS INST OF TECH	NGR 22-009-701	Young, L. R.	41	2388
LARC	Card, M. F.	MASS INST OF TECH	NGR 22-009-781	Mar, J. W.	41	2399
LARC	Hoad, D. R.	MASS INST OF TECH	NGR 22-009-818	Widnall, S. E.	41	2407
LARC	Elliott, J. R.	MASS INST OF TECH	NSG 1018	Athens, M.	41	2410
LARC	Hess, R. V.	MASS INST OF TECH	NSG 1048	Wrighton, M. S.	12	2411
LARC	Reed, W. H., III	MASS INST OF TECH	NSG 1051	Dugundji, J.	41	2412
LARC	Montgomery, R. C.	MASS INST OF TECH	NSG 1112	Willsky, A. S.	41	2413
LARC	Mace, W. D.	MASS INST OF TECH	NSG 1123	Odoni, A. R.	41	2414
LARC	Byvik, C. E.	MASS INST OF TECH	NSG 1190	Gatos, H. C.	47	2415
LARC	Shepherd, W. T.	MEMPHIS ST UNIV	NGR 43-008-008	Fletcher, J. L.	69	3201
LARC	Unavailable	MICHIGAN STATE UNIV	NAS 1-6860	Unavailable	13	2454
LARC	Hardin, J. C.	MICHIGAN STATE UNIV	NGR 23-004-091	Foss, J. F.	41	2457
LARC	Fischer, M. C.	MICHIGAN STATE UNIV	NSG 1138	Foss, J. F.	41	2458
LARC	Elber, W.	MICHIGAN STATE UNIV	NSG 1148	Sharpe, W. N.	47	2459
LARC	Bobbitt, P. J.	MISSISSIPPI STATE U	NGR 25-001-055	Thompson, J. F.	41	2573
LARC	Hall, A. W.	MISSISSIPPI STATE U	NSG 1083	Cross, E. J., Jr.	41	2574
LARC	Harvey, G. A.	NEW MEX ST U-LAS CR	NAS 1-13586	Beebe, R.	11	2699
LARC	Jones, W. L.	NEW YORK UNIVERSITY	NAS 1-10090	Pierson, W. J., Jr.	99	2832
LARC	Freeman, R. S.	NEW YORK UNIVERSITY	NAS 1-10282	Korer, S. A.	31	2833
LARC	Fetterman, D. E.	NEW YORK UNIVERSITY	NGL 33-016-119	Ferri, A.	41	2838
LARC	Huber, P. W.	NEW YORK UNIVERSITY	NGR 33-016-131	Ferri, A.	41	2839
LARC	South, J. C., Jr.	NEW YORK UNIVERSITY	NGR 33-016-167	Garabedian, P. R.	21	2840
LARC	Norum, T. D.	NEW YORK UNIVERSITY	NGR 33-016-177	Ferri, A.	41	2841
LARC	Dunavant, J. C.	NEW YORK UNIVERSITY	NGR 33-016-179	Zakkay, V.	41	2842
LARC	Hefner, J. N.	NEW YORK UNIVERSITY	NSG 1049	Ferri, A.	41	2846
LARC	Shoosmith, J. N.	NORFOLK STATE COL	NSG 1014	Boseman, M.	21	3502
LARC	Mehrens, H. E.	NORFOLK STATE COL	NSG 1073	Jacobs, J. A.	49	3503
LARC	Stephens, D. G.	NORFOLK STATE COL	NSG 1074	Colegate, R. L.	59	3504
LARC	Conner, D. W.	NORFOLK STATE COL	NSG 1145	Ficht, J. C.	79	3505
LARC	Fripp, A. L.	NO CAR A&T STATE U	NGR 34-012-004	Williams, L., Jr.	13	2940
LARC	Allario, F.	NO CAR A&T STATE U	NSG 1147	Yu, C.	13	2943
LARC	Lassiter, W. S.	NO CAROLINA STATE U	NAS 1-12833	Monteith, L. K.	45	2944
LARC	Thomson, R. G.	NO CAROLINA STATE U	NGL 34-002-084	Chang, T. S.	41	2947
LARC	Gunn, W. J.	NO CAROLINA STATE U	NGL 34-002-095	Levere, T. E.	69	2948
LARC	Hagginbothom, W. K., Jr.	NO CAROLINA STATE U	NGR 34-002-108	Manning, C. R., Jr.	47	2949
LARC	Gross, C.	NO CAROLINA STATE U	NGR 34-002-117	Benson, R. B.	13	2950
LARC	Croswell, W. F.	NO CAROLINA STATE U	NGR 34-002-188	Herman, B. M.	45	2953
LARC	Sidney, B. D.	NO CAROLINA STATE U	NSG 1013	Hassan, H. A.	31	2957
LARC	Hohl, F.	NO CAROLINA STATE U	NSG 1058	Hassan, H. A.	13	2958
LARC	Crane, H. L.	NO CAROLINA STATE U	NSG 1077	Smetana, F. O.	41	2959
LARC	Hutchby, J. A.	NO CAROLINA STATE U	NSG 1116	Hauser, J. R.	45	2960
LARC	Oneal, R. L.	NO CAROLINA STATE U	NSG 1133	Manning, C. R., Jr.	47	2961
LARC	Oneal, R. L.	NO CAROLINA STATE U	NSG 1136	Bailey, J. A.	47	2962
LARC	Walberg, G. D.	NO CAROLINA STATE U	NSG 1191	Dejarnette, F. R.	41	2963
LARC	Miller, W. E.	NO CAROLINA STATE U	NSG 1202	Littlejohn, M. A.	13	2964
LARC	Mayes, W. H.	NO CAROLINA STATE U	NSG 1205	Hart, F. D.	13	2965
LARC	Singh, J. J.	NTHWSTN ST COL-OKLA	NSG 1134	Brown, K. H.	13	3057
LARC	Gilreath, M. C.	OHIO STATE UNIV	NGL 36-008-138	Burnside, W. D.	45	3011
LARC	Card, M. F.	OHIO STATE UNIV	NGR 36-008-197	Bailey, C. D.	41	3014
LARC	Hall, A. W.	OHIO STATE UNIV	NSG 1184	Gregorek, G. M.	41	3019
LARC	Dibattista, J. D.	OHIO STATE UNIV	NSG 1212	Nerem, R. M.	99	3020
LARC	Mace, W. D.	OHIO UNIVERSITY	NGR 36-009-017	McFarland, R. H.	45	3024
LARC	Martin, D. J.	OLD DOMINION UNIV	NAS 1-9434	Ousterhout, D. S.	99	3506
LARC	Martin, D. J.	OLD DOMINION UNIV	NAS 1-11707	Ousterhout, D. S.	49	3507
LARC	Hillard, M. E., Jr.	OLD DOMINION UNIV	NAS 1-13820	Bandy, A. R.	13	3508
LARC	Johnston, N. J.	OLD DOMINION UNIV	NGL 47-003-008	Williams, R. L.	12	3510
LARC	Leland, T. J.	OLD DOMINION UNIV	NGL 47-003-012	Cheng, R.	44	3511

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LARC	Gentry, G. L., Jr.	OLD DOMINION UNIV	NGL 47-003-039	Ousterhout, D. S.	41	3512
LARC	Outlaw, R. A.	OLD DOMINION UNIV	NGR 47-003-043	Brock, F. J.	13	3514
LARC	Phillips, D. H.	OLD DOMINION UNIV	NGR 47-003-048	Ake, R. L.	13	3515
LARC	Anderson, A. F.	OLD DOMINION UNIV	NGR 47-003-052	Roberts, A. S., Jr.	41	3516
LARC	Crumbly, K. H.	OLD DOMINION UNIV	NGR 47-003-068	Harris, F. S., Jr.	31	3517
LARC	Outlaw, R. A.	OLD DOMINION UNIV	NGR 47-003-077	Cox, J. L.	13	3518
LARC	Wilson, J. W.	OLD DOMINION UNIV	NGR 47-003-078	Khandelwal, G. S.	13	3519
LARC	Melfi, L. T., Jr.	OLD DOMINION UNIV	NGR 47-003-082	Clay, F. P., Jr.	31	3520
LARC	Mixson, J. S.	OLD DOMINION UNIV	NGR 47-003-083	Kirby, R. H.	69	3521
LARC	Northam, G. B.	OLD DOMINION UNIV	NGR 47-003-087	Bandy, A. R.	39	3522
LARC	Hohl, F.	OLD DOMINION UNIV	NSG 1022	Harries, W. L.	13	3525
LARC	Keating, G. M.	OLD DOMINION UNIV	NSG 1028	Goglia, G. L.	31	3526
LARC	Morgan, H. L., Jr.	OLD DOMINION UNIV	NSG 1038	Baker, A. J.	41	3527
LARC	Holmes, H. K.	OLD DOMINION UNIV	NSG 1039	Zuckerwar, A. J.	49	3528
LARC	Hohl, F.	OLD DOMINION UNIV	NSG 1040	Harries, W. L.	19	3529
LARC	Orr, H. D.	OLD DOMINION UNIV	NSG 1041	Becher, J.	39	3530
LARC	Leatherwood, J. D.	OLD DOMINION UNIV	NSG 1042	Kirby, R. H.	69	3531
LARC	Davis, J. G., Jr.	OLD DOMINION UNIV	NSG 1043	Thornton, E. A.	49	3532
LARC	Wilson, J. W.	OLD DOMINION UNIV	NSG 1055	Khandelwal, G. S.	19	3533
LARC	Remsberg, E. E.	OLD DOMINION UNIV	NSG 1060	Kindle, E. C.	31	3534
LARC	Walberg, G. D.	OLD DOMINION UNIV	NSG 1065	Goglia, G. L.	41	3535
LARC	Tripp, J. S.	OLD DOMINION UNIV	NSG 1079	Tcheng, P. L.	45	3536
LARC	Harris, J. E.	OLD DOMINION UNIV	NSG 1087	Goglia, G. L.	41	3537
LARC	Shepherd, W. T.	OLD DOMINION UNIV	NSG 1092	Alluisi, E. A.	69	3539
LARC	Wieting, A. R.	OLD DOMINION UNIV	NSG 1093	Thornton, E. A.	47	3540
LARC	Harris, J. E.	OLD DOMINION UNIV	NSG 1098	Cooke, C. H.	41	3542
LARC	Hefner, J. N.	OLD DOMINION UNIV	NSG 1100	Ash, R. L.	41	3543
LARC	McCormick, M. P.	OLD DOMINION UNIV	NSG 1108	Chu, W. P.	31	3544
LARC	Weidman, D. J.	OLD DOMINION UNIV	NSG 1117	Narayananaswami, R.	44	3545
LARC	Reichle, H. G., Jr.	OLD DOMINION UNIV	NSG 1127	Kindle, E. C.	31	3546
LARC	Russell, J. M., III	OLD DOMINION UNIV	NSG 1131	Kindle, E. C.	31	3547
LARC	Henderson, W. P.	OLD DOMINION UNIV	NSG 1135	Goglia, G. L.	41	3548
LARC	Kershner, D. D.	OLD DOMINION UNIV	NSG 1143	Barna, P. S.	41	3549
LARC	Maestrello, L.	OLD DOMINION UNIV	NSG 1144	Goglia, G. L.	21	3550
LARC	Tolson, R. H.	OLD DOMINION UNIV	NSG 1152	Breedlove, W. J., Jr.	19	3551
LARC	Reichle, H. G., Jr.	OLD DOMINION UNIV	NSG 1153	Tiwari, S. N.	31	3552
LARC	Davis, J. G., Jr.	OLD DOMINION UNIV	NSG 1167	Hyer, M. W.	41	3553
LARC	Marushi, C. B.	OLD DOMINION UNIV	NSG 1172	Crossman, G. R.	49	3554
LARC	Hellbaum, R. F.	OLD DOMINION UNIV	NSG 1177	Goglia, G. L.	45	3555
LARC	Tynan, C. I., Jr.	OLD DOMINION UNIV	NSG 1186	Goglia, G. L.	99	3556
LARC	Allario, F.	OLD DOMINION UNIV	NSG 1197	Kindle, E. C.	31	3557
LARC	Keating, G. M.	OLD DOMINION UNIV	NSG 1207	Goglia, G. L.	19	3558
LARC	Seiner, J. M.	PENNSYLVANIA STATE U	NGL 39-009-121	Reethof, G.	41	3124
LARC	Heyson, H. H.	PENNSYLVANIA STATE U	NGL 39-009-172	Eisenhuth, J. J.	41	3125
LARC	Posey, J. W.	PENNSYLVANIA STATE U	NSG 1126	Reethof, G.	46	3134
LARC	Slemp, W. S.	PENNSYLVANIA STATE U	NSG 1141	Allcock, H. R.	12	3135
LARC	Graves, R. A., Jr.	POLY INST OF NY	NSG 1091	Rubin, S. G.	21	2858
LARC	Pinson, L. D.	POLY INST OF NY	NSG 1105	Yu, Y. Y.	41	2859
LARC	Morgan, H. L., Jr.	POLY INST OF NY	NSG 1107	Krenkel, A. R.	41	2860
LARC	Hoppe, J. C.	POLY INST OF NY	NSG 1198	Lederman, S.	42	2861
LARC	Williams, T. S., Jr.	POMONA COLLEGE	NAS 1-11854	Baird, A. K.	12	1266
LARC	Williams, T. S., Jr.	PRINCETON UNIVERSITY	NAS 1-9705	Hargraves, R. B.	19	2645
LARC	Miller, G. K.	PRINCETON UNIVERSITY	NAS 1-13502	Socket, E.	41	2646
LARC	Hilton, D. A.	PRINCETON UNIVERSITY	NGL 31-001-119	Hayes, W. D.	41	2658
LARC	Mixson, J. S.	PRINCETON UNIVERSITY	NGL 31-001-146	Dowell, E. H.	41	2659
LARC	Reid, H. J., Jr.	PRINCETON UNIVERSITY	NGL 31-001-252	Graham, D.	41	2660
LARC	Johnston, N. J.	PRINCETON UNIVERSITY	NGR 31-001-221	Gillham, J. K.	12	2666
LARC	McHatton, A. D.	PRINCETON UNIVERSITY	NGR 31-001-272	Gillham, J. K.	19	2670

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LARC	Hunter, W. W.	PRINCETON UNIVERSITY	NSG 1070	Greaux, A. E.	13	2677
LARC	Crane, H. L.	PRINCETON UNIVERSITY	NSG 1078	Seckel, E.	41	2678
LARC	Lazarus, A. J.	PRINCETON UNIVERSITY	NSG 1129	Stoescu, M. L.	49	2679
LARC	Landrum, E. J.	PURDUE UNIVERSITY	NGR 15-005-119	Marshall, F. J.	41	2054
LARC	Pao, S. P.	PURDUE UNIVERSITY	NGR 15-005-174	Kentzer, C. P.	39	2059
LARC	Wood, G. M.	RENSSELAER POLY-NY	NSG 1052	White, F. A.	19	2874
LARC	Hood, R. V.	RENSSELAER POLY-NY	NSG 1188	Kaufman, H.	41	2875
LARC	Outlaw, R. A.	RICE UNIVERSITY	NSG 1017	Stebbing, R. F.	13	3285
LARC	Ray, E. J.	ROSE-HULMAN INST TEC	NSG 1154	Roper, A. T.	41	2066
LARC	Sobieszczanski, J. E.	ST LOUIS UNIVERSITY	NGL 26-006-021	Long, C. A.	41	2579
LARC	Bell, V. L.	SHAW UNIVERSITY	NSG 1033	Chatterji, A. K.	12	2967
LARC	Breckenridge, R. A.	SOUTHERN METHODIST U	NGL 44-007-042	Chu, T. L.	47	3290
LARC	Bracalente, E. M.	SOUTHERN METHODIST U	NGR 44-007-049	Gupta, S. C.	45	3291
LARC	Walker, G. H.	SOUTHERN METHODIST U	NSG 1206	Ashley, K. L.	45	3292
LARC	Williams, T. S., Jr.	STANFORD UNIVERSITY	NAS 1-9682	Levinthal, E. C.	99	1305
LARC	Williams, T. S., Jr.	STANFORD UNIVERSITY	NAS 1-9692	Lederberg, J.	51	1306
LARC	Williams, T. S., Jr.	STANFORD UNIVERSITY	NAS 1-9701	Tyler, G. L.	45	1307
LARC	Doggett, R. V., Jr.	STANFORD UNIVERSITY	NGL 05-020-243	Ashley, H.	41	1352
LARC	Reed, W. H., III	STANFORD UNIVERSITY	NGL 05-020-397	Herrmann, G.	41	1355
LARC	Northam, G. B.	STANFORD UNIVERSITY	NSG 1012	Byer, R. L.	31	1386
LARC	Parrish, R. V.	STANFORD UNIVERSITY	NSG 1137	Towell, J. D.	41	1387
LARC	Hutchby, J. A.	STANFORD UNIVERSITY	NSG 1201	Pearson, G. L.	13	1388
LARC	Keating, G. M.	STANFORD UNIVERSITY	NSG 1210	Debra, D. B.	49	1389
LARC	Williams, T. S., Jr.	STATE U NY-STONY BRK	NAS 1-10493	Owen, T.	39	2895
LARC	Stermer, R. L.	SYRACUSE UNIVERSITY	NSG 1194	Schroder, K.	45	2920
LARC	Hardesty, C. A.	TENNESSEE TECH U	NGR 43-003-012	McLennan, W. D.	13	3208
LARC	South, J. C., Jr.	TEXAS A&M UNIVERSITY	NGR 44-001-157	Carlson, L. A.	41	3325
LARC	South, J. C., Jr.	TEXAS A&M UNIVERSITY	NSG 1174	Carlson, L. A.	41	3326
LARC	Williams, J. G.	UNIV OF BRIDGEPORT	NGR 07-001-004	Palazotto, A. N.	41	1743
LARC	Stroud, W. J.	UNIV CALIF-L ANGELES	NGR 05-007-337	Schmit, L. A.	41	1532
LARC	Bland, S. R.	UNIV CALIF-L ANGELES	NGR 05-007-395	Cole, J. D.	41	1535
LARC	Hammond, C. E.	UNIV CALIF-L ANGELES	NGR 05-007-414	Friedmann, P. P.	41	1537
LARC	Keating, G. M.	UNIV CALIF-L ANGELES	NGR 05-007-416	Knuth, E. L.	13	1538
LARC	McCormick, M. P.	UNIV CALIF-L ANGELES	NSG 1106	Kuriyan, J. G.	31	1542
LARC	Gessow, A.	UNIV CALIF-SAN DIEGO	NGR 05-009-178	Libby, P. A.	41	1580
LARC	Quejow, M. J.	UNIV OF CINCINNATI	NGR 36-004-061	Wells, W. R.	41	3030
LARC	Williams, J. G.	UNIV OF CINCINNATI	NGR 36-004-065	Sobel, L. H.	49	3032
LARC	Harris, J. E.	UNIV OF CINCINNATI	NGR 36-004-069	Davis, R. T.	41	3034
LARC	Mikulas, M. M.	UNIV OF CINCINNATI	NSG 1185	Nayfeh, A. H.	49	3036
LARC	Dunavant, J. C.	UNIV OF CINCINNATI	NSG 1208	Polak, A.	41	3037
LARC	Hutchby, J. A.	UNIV COLORADO-BOLDR	NGR 06-003-205	Chernow, F.	13	1714
LARC	Hutchby, J. A.	UNIV COLORADO-BOLDR	NSG 1027	Chernow, F.	19	1721
LARC	Hutchby, J. A.	UNIV COLORADO-BOLDR	NSG 1037	Chernow, F.	19	1722
LARC	Rainey, R. W.	UNIV COLORADO-BOLDR	NSG 1056	Culp, R. D.	41	1723
LARC	Jones, R. L.	UNIV COLORADO-BOLDR	NSG 1140	Horowitz, I.	45	1724
LARC	Schy, A. A.	UNIV COLORADO-BOLDR	NSG 1213	Wang, S. H.	45	1725
LARC	Shepherd, W. T.	UNIV OF CONNECTICUT	NSG 1082	Cooker, H. S.	49	1747
LARC	Johnson, R. W.	UNIV OF DELAWARE	NAS 1-12304	Klemas, V.	39	1763
LARC	Collins, V. G.	UNIV OF DELAWARE	NSG 1149	Klemas, V.	39	1766
LARC	Bement, L.	UNIV OF DENVER	NAS 1-13817	Wittman, R. H.	47	1729
LARC	Russell, J. M., III	UNIV OF DENVER	NGR 06-004-131	Murcay, D. G.	31	1738
LARC	Williams, T. S., Jr.	UNIV OF HOUSTON	NAS 1-9685	Oro, J.	39	3331
LARC	Fischer, M. C.	UNIV OF HOUSTON	NSG 1103	Hussain, A. F.	41	3364
LARC	Evans, J. S.	UNIV ILLINOIS-CHICGO	NSG 1150	Chung, P. M.	41	2003
LARC	Morgan, H. L., Jr.	UNIV ILLINOIS-URBANA	NGR 14-005-144	Ormsbee, A. I.	41	2008
LARC	Stickle, J. W.	UNIV ILLINOIS-URBANA	NGR 14-005-194	Ormsbee, A. I.	41	2015
LARC	Hohl, F.	UNIV ILLINOIS-URBANA	NSG 1063	Milev, G. H.	13	2019
LARC	Coffee, C. W., Jr.	UNIV OF IOWA	NAS 1-13129	Van Allen, J. A.	13	2086

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LARC	Schroeder, L. C.	UNIV OF KANSAS	NAS 1-10048	Moore, R. K.	99	2106
LARC	Ward, J. F.	UNIV OF KANSAS	NAS 1-12976	Muirhead, V. U.	41	2107
LARC	Crane, H. L.	UNIV OF KANSAS	NGR 17-002-072	Kohlman, D. L.	41	2122
LARC	Pride, R. A.	UNIV OF KANSAS	NGR 17-004-027	Lenzen, K. H.	41	2124
LARC	Lamar, J. E.	UNIV OF KANSAS	NSG 1046	Roskam, J.	41	2125
LARC	Naumann, E. C.	UNIV OF KANSAS	NSG 1122	Lenzen, K. H.	41	2126
LARC	Campbell, J. F.	UNIV OF KANSAS	NSG 1139	Lan, C. E.	41	2127
LARC	Bailey, M. C.	UNIV OF KANSAS	NSG 1142	Biggs, A. W.	45	2128
LARC	Hall, A. W.	UNIV OF KANSAS	NSG 1175	Roskam, J.	41	2129
LARC	Reichle, H. G., Jr.	UNIV OF KENTUCKY	NSG 1111	Peters, L. K.	31	2150
LARC	Pellett, G. L.	UNIV MARYLAND-COL PK	NSG 1031	Guard, R. W.	12	2268
LARC	Northam, G. B.	UNIV MARYLAND-COL PK	NSG 1036	Wilkerson, T. D.	31	2269
LARC	Hoell, J. M.	UNIV MARYLAND-COL PK	NSG 1075	Davis, D. D.	39	2270
LARC	Northam, G. B.	UNIV MARYLAND-COL PK	NSG 1156	Gammon, R. W.	31	2271
LARC	McComb, H. G., Jr.	UNIV MARYLAND-COL PK	NSG 1193	Schaeffer, H. G.	41	2272
LARC	Housner, J. M.	UNIV OF MIAMI	NSG 1044	Plass, H. J., Jr.	46	1872
LARC	McCarty, J. L.	UNIV MICH-ANN ARBOR	NGL 23-005-010	Clark, S. R.	41	2482
LARC	Czarnecki, K. R.	UNIV MICH-ANN ARBOR	NGR 23-005-523	Sichel, M.	41	2491
LARC	Fichter, W. B.	UNIV MICH-ANN ARBOR	NGR 23-005-528	Felbeck, D. K.	47	2492
LARC	Reichle, H. G., Jr.	UNIV MICH-ANN ARBOR	NGR 23-005-617	Drayson, S. R.	31	2501
LARC	Russell, J. M., III	UNIV MICH-ANN ARBOR	NSG 1003	Drayson, S. R.	31	2502
LARC	McCarty, J. L.	UNIV MICH-ANN ARBOR	NSG 1080	Clark, S. K.	41	2503
LARC	Straeter, T. A.	UNIV MICH-ANN ARBOR	NSG 1176	Holland, J. H.	21	2504
LARC	Williams, T. S., Jr.	U MINN-MNPLS-ST PAUL	NAS 1-9697	Nier, A. O.	99	2519
LARC	Beswick, A. G.	U MINN-MNPLS-ST PAUL	NAS 1-11676	Nier, A. O.	31	2520
LARC	Keating, G. M.	U MINN-MNPLS-ST PAUL	NAS 1-13712	Mauersberger, K.	31	2521
LARC	Weigand, A. J.	U MINN-MNPLS-ST PAUL	NSG 3041	Wehner, G. K.	13	2548
LARC	Mixson, J. S.	UNIV MO-ROLLA	NSG 1050	Koval, L. R.	41	2595
LARC	Reichle, H. G., Jr.	UNIV NEW BRUNSWICK	NGR 52-163-001	Young, C.	31	3719
LARC	Williams, T. S., Jr.	UNIV OF NEW MEXICO	NAS 1-11855	Keil, K.	12	2713
LARC	Hellbaum, R. F.	UNIV OF NEW MEXICO	NGR 32-004-026	Richards, C. G.	46	2729
LARC	Hendricks, H. D.	UNIV OF NOTRE DAME	NSG 1102	Magee, C. J.	45	2068
LARC	Gross, C.	UNIV OKLAHOMA-NORMAN	NSG 1183	Kahng, S. K.	45	3070
LARC	Suttles, J. T.	UNIV OF RHODE ISLAND	NSG 1008	Spaulding, M. L.	49	3179
LARC	Gainer, P. A.	UNIV OF ROCHESTER	NSG 1211	Brown, J. L.	69	2925
LARC	Park, S. K.	UNIV OF SO FLORIDA	NSG 1159	Tsokos, C. P.	21	1874
LARC	Johnston, N. J.	UNIV SO MISSISSIPPI	NGR 25-005-005	Thames, S. F.	12	2578
LARC	Hammond, C. E.	UNIV TENNESSEE-KNOXV	NSG 1054	Lumsdaine, E.	41	3225
LARC	Chestnutt, D.	UNIV TENNESSEE-KNOXV	NSG 1081	Lumsdaine, E.	41	3226
LARC	Newman, J. C., Jr.	UNIV TENNESSEE-KNOXV	NSG 1163	Wright, M. A.	47	3227
LARC	Hammond, C. E.	UNIV TENNESSEE-KNOXV	NSG 1171	Lumsdaine, E.	41	3228
LARC	Pinson, L. D.	UNIV TEXAS-AUSTIN	NSG 1001	Craig, R. R.	49	3402
LARC	Williams, T. S., Jr.	UNIV TEXAS-DALLAS	NAS 1-9699	Hanson, W. B.	99	3407
LARC	Foye, R. L.	UNIV OF TORONTO	NGR 52-026-039	Tennyson, R. C.	41	3720
LARC	Williams, T. S., Jr.	UNIV OF UTAH	NAS 1-12705	Shorthill, R. W.	19	3449
LARC	Hardesty, C. A.	UNIV OF UTAH	NGL 45-003-025	Weil, H.	31	3460
LARC	Sewall, J. L.	UNIV OF UTAH	NSG 1113	Hufferd, W. L.	42	3465
LARC	Lawton, B. W.	UNIV OF UTAH	NSG 1160	Shepherd, K. P.	69	3466
LARC	Kelly, W. L.	UNIV OF VIRGINIA	NAS 1-10210	White, E. J.	45	3561
LARC	Martin, D. J.	UNIV OF VIRGINIA	NAS 1-12754	Barnes, D. W.	99	3562
LARC	Yates, E. C., Jr.	UNIV OF VIRGINIA	NGL 47-005-098	Haviland, J. K.	41	3569
LARC	Sewall, J. L.	UNIV OF VIRGINIA	NGR 47-005-145	Pilkey, W. D.	46	3570
LARC	Schoonover, W. E., Jr.	UNIV OF VIRGINIA	NGR 47-005-181	Kuhlthau, A. R.	41	3573
LARC	Lichtenstein, J. H.	UNIV OF VIRGINIA	NGR 47-005-208	Jacobson, I. D.	41	3577
LARC	Schoenster, J. A.	UNIV OF VIRGINIA	NGR 47-005-219	Haviland, J. K.	41	3579
LARC	Kilgore, R. A.	UNIV OF VIRGINIA	NSG 1010	Zapata, R. N.	41	3580
LARC	Wells, J. G., Jr.	UNIV OF VIRGINIA	NSG 1067	Parrish, E. A., Jr.	45	3581
LARC	Hueschen, R. M.	UNIV OF VIRGINIA	NSG 1101	Cook, G.	49	3582

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LARC	Shultz, L. R.	UNIV OF VIRGINIA	NSG 1128	McAlpine, G. A.	45	3583
LARC	Barker, L. E.	UNIV OF VIRGINIA	NSG 1151	Parrish, E. A., Jr.	21	3584
LARC	Leatherwood, J. D.	UNIV OF VIRGINIA	NSG 1180	Jacobson, I. D.	41	3585
LARC	Williams, T. S., Jr.	UNIV OF WASHINGTON	NAS 1-9694	Leovy, C. B.	31	3632
LARC	Heyson, H. H.	UNIV OF WASHINGTON	NGL 48-002-010	Joppa, R. G.	41	3639
LARC	Heyson, H. H.	UNIV OF WASHINGTON	NGL 48-002-035	Rae, W. H.	41	3640
LARC	Smith, G. L.	UNIV WISC-MADISON	NAS 1-13204	Suomi, V. E.	31	3667
LARC	Remsberg, E. E.	UNIV WISC-MADISON	NSG 1057	Weinman, J. A.	31	3699
LARC	Campbell, J. W.	UNIV WISC-MADISON	NSG 1196	Johnson, R. A.	21	3700
LARC	Young, W. H., Jr.	UNIV WISC-MILWAUKEE	NGR 50-007-001	Bratanow, T.	41	3705
LARC	Mauldin, L. E.	UNIV OF WYOMING	NAS 1-12798	Pepin, T. J.	31	3707
LARC	Crumbly, K. H.	UNIV OF WYOMING	NAS 1-13213	Pepin, T. J.	31	3708
LARC	Hedgepeth, K. D.	UNIV OF WYOMING	NAS 1-13797	Pepin, T. J.	31	3709
LARC	McCormick, M. P.	UNIV OF WYOMING	NGR 51-001-045	Schroeder, D. J.	31	3715
LARC	Mauldin, L. E., III	UNIV OF WYOMING	NSG 1006	Pepin, T. J.	31	3716
LARC	Hohl, F.	VANDERBILT UNIVERSTY	NGR 43-002-031	Lee, J. H.	13	3238
LARC	Wilkins, J. R.	VIRGINIA COMNWLTH U	NGL 47-002-020	Dalton, H. P.	51	3587
LARC	Bell, V. L.	VIRGINIA COMNWLTH U	NGR 47-002-041	Stump, B. L.	12	3588
LARC	Creedon, J. F.	VA MILITARY INSTITUT	NGR 47-018-005	Reid, G. F.	41	3589
LARC	Byvik, C. E.	VIRGINIA POLY INST	NAS 1-10646	Wightman, J. P.	31	3590
LARC	Martin, D. J.	VIRGINIA POLY INST	NAS 1-13175	Robertson, R. M.	49	3591
LARC	Posey, J. W.	VIRGINIA POLY INST	NAS 1-13884	Nayfeh, A. H.	13	3592
LARC	Anderson, A. F.	VIRGINIA POLY INST	NGR 47-004-090	Fabrycky, W. J.	41	3600
LARC	Beckwith, I. E.	VIRGINIA POLY INST	NGR 47-004-106	Schetz, J. A.	41	3604
LARC	Stein, B. A.	VIRGINIA POLY INST	NGR 47-004-108	Lytton, J. L.	47	3605
LARC	Hayduk, R. J.	VIRGINIA POLY INST	NGR 47-004-114	Kamat, M. P.	44	3606
LARC	Montgomery, R. C.	VIRGINIA POLY INST	NGR 47-004-116	Caglayan, A. K.	41	3607
LARC	Davis, J. G., Jr.	VIRGINIA POLY INST	NGR 47-004-129	Herakovich, C. T.	49	3609
LARC	Montgomery, R. C.	VIRGINIA POLY INST	NSG 1015	Cliff, E. M.	41	3610
LARC	Yeager, P. R.	VIRGINIA POLY INST	NSG 1020	Sanzone, G.	13	3611
LARC	Newman, J. C., Jr.	VIRGINIA POLY INST	NSG 1024	Smith, C. W.	41	3612
LARC	Johnston, N. J.	VIRGINIA POLY INST	NSG 1064	Wolfe, J. F.	12	3613
LARC	Campbell, J. W.	VIRGINIA POLY INST	NSG 1071	Hinkelmann, K.	21	3614
LARC	Young, P. R.	VIRGINIA POLY INST	NSG 1085	Mason, J. G.	12	3615
LARC	Davidson, J. R.	VIRGINIA POLY INST	NSG 1099	Heller, R. A.	41	3616
LARC	Kruszewski, E. T.	VIRGINIA POLY INST	NSG 1109	Meirovitch, L.	44	3617
LARC	Kvaternik, R. G.	VIRGINIA POLY INST	NSG 1114	Meirovitch, L.	41	3618
LARC	Sentell, R. J.	VIRGINIA POLY INST	NSG 1119	Furr, A. K.	13	3619
LARC	Progar, D. J.	VIRGINIA POLY INST	NSG 1124	Wightman, J. P.	12	3620
LARC	Cuddihy, D. G.	VIRGINIA POLY INST	NSG 1132	Bennett, W. E., III	45	3621
LARC	Campbell, J. W.	VIRGINIA POLY INST	NSG 1182	Myers, R. H.	31	3622
LARC	Pellett, G. L.	VIRGINIA POLY INST	NSG 1195	Wightman, J. P.	12	3623
LARC	Tenney, D. R.	VIRGINIA POLY INST	NSG 1214	Houska, C. R.	47	3624
LARC	Lester, H. C.	VIRGINIA STATE COL	NGL 47-014-009	Agrawal, K. M.	41	3628
LARC	Wilson, J. W.	VIRGINIA STATE COL	NGR 47-014-006	Stronach, C. E.	13	3630
LARC	Mehrens, H. E.	VIRGINIA STATE COL	NGR 47-014-007	Van Dyke, A.	49	3631
LARC	Williams, T. S., Jr.	WASHINGTON UNIVERSTY	NAS 1-13889	Arvidson, R. E.	39	2596
LARC	Heyman, J. S.	WASHINGTON UNIVERSTY	NSG 1016	Miller, J. G.	13	2606
LARC	Kelly, W. L.	WASHINGTON UNIVERSTY	NSG 1084	Arvidson, R. E.	32	2607
LARC	Deaton, J. W.	WASHINGTON UNIVERSTY	NSG 1157	Wu, E. M.	46	2608
LARC	Johnson, J. W.	WEST VIRGINIA UNIV	NGR 49-001-056	Balanis, C. A.	45	3662
LARC	Kirby, C. E.	WEST VIRGINIA UNIV	NGR 49-001-061	Steinhardt, E. J.	39	3663
LARC	Noonan, K. W.	WICHITA STATE UNIV	NGR 17-003-021	Wentz, W. H., Jr.	41	2134
LARC	Crane, H. L.	WICHITA STATE UNIV	NSG 1118	Wentz, W. H., Jr.	41	2135
LARC	McGhee, R. J.	WICHITA STATE UNIV	NSG 1165	Wentz, W. H., Jr.	41	2136
LARC	Bowman, J. S., Jr.	WICHITA STATE UNIV	NSG 1189	Craig, A. J.	41	2137
LARC	Morgan, H. L., Jr.	WICHITA STATE UNIV	NSG 1192	Zumwalt, G. W.	41	2138
LARC	Hueschen, R. M.	YOUNGSTOWN STATE U	NSG 1199	Foulkes, R. H., Jr.	49	3056

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LERC	Roth, J. R.	BRIGHAM YOUNG UNIV	NSG 3068	Gardner, A. L.	13	3448
LERC	Misencik, J. A.	BROWN UNIVERSITY	NGL 40-002-080	Mylonas, C.	46	3171
LERC	Seasholtz, R. G.	BUCKNELL UNIVERSITY	NGR 39-027-003	Maxwell, B. R.	49	3087
LERC	Young, S. G.	CHICAGO STATE UNIV	NSG 3030	Treptow, R. S.	99	1954
LERC	SandercocK, D. M.	CALIF INST OF TECH	NGL 05-002-136	Rannie, W. D.	41	1202
LERC	Coe, H. H.	CAL STATE U-NRTHRDGE	NGR 05-062-002	Nypan, L. J.	46	1255
LERC	Coe, H. H.	CAL STATE U-NRTHRDGE	NSG 3065	Nypan, L. J.	46	1256
LERC	Priem, R. J.	CAL STATE U-SACRAMEN	NGR 05-058-003	Reardon, F. H.	42	1259
LERC	Witzke, W.	CARNEGIE-MELLON UNIV	NAS 3-18929	Bhat, G. K.	47	3088
LERC	Klopp, W. D.	CARNEGIE-MELLON UNIV	NGR 39-087-003	Low, J. R., Jr.	47	3089
LERC	Klopp, W. D.	CARNEGIE-MELLON UNIV	NGR 39-087-047	Low, J. R., Jr.	47	3091
LERC	Srawley, J. E.	CARNEGIE-MELLON UNIV	NGR 39-087-053	Swedlow, J. L.	46	3092
LERC	Ludwig, L. P.	CARNEGIE-MELLON UNIV	NSG 3023	Hughes, W. F.	46	3093
LERC	Nichols, L. D.	CASE WESTERN RESERVE	NGL 36-003-064	Reshotko, E.	19	2975
LERC	Quatinetz, M.	CASE WESTERN RESERVE	NGL 36-003-094	Reshotko, L. J.	47	2976
LERC	Anderson, B. H.	CASE WESTERN RESERVE	NGR 36-027-038	Reshotko, E.	41	2978
LERC	Gray, H. R.	CASE WESTERN RESERVE	NGR 36-027-051	Hehemann, R. H.	47	2980
LERC	Bishop, A. R.	CASE WESTERN RESERVE	NGR 36-027-064	Reshotko, E.	41	2983
LERC	Kohl, F. J.	CASE WESTERN RESERVE	NSG 3009	Mateescu, G. D.	12	2987
LERC	Probst, H. B.	CASE WESTERN RESERVE	NSG 3027	Mitchell, T. E.	47	2988
LERC	Fortini, A.	CASE WESTERN RESERVE	NSG 3040	Dybbs, A.	47	2989
LERC	Labus, T. L.	CASE WESTERN RESERVE	NSG 3053	Ostrach, S.	49	2990
LERC	Bober, L. J.	CASE WESTERN RESERVE	NSG 3058	Reshotko, E.	41	2991
LERC	Sockol, P. M.	CASE WESTERN RESERVE	NSG 3062	Reshotko, E.	41	2992
LERC	Deissler, R. G.	CATHOLIC UNIVERSITY	NGR 09-005-076	Ling, S. C.	13	1772
LERC	Deissler, R. G.	CATHOLIC UNIVERSITY	NGR 09-005-099	Ling, S. C.	41	1774
LERC	Raquet, C. A.	CENTRAL ST UNIV-OHIO	NGR 36-033-002	Rubin, D.	51	2994
LERC	Fordyce, J. S.	CENTRAL ST UNIV-OHIO	NGR 36-033-003	Craft, T. J., Sr.	51	2995
LERC	Putre, H.	CITY COLLEGE OF N Y	NGL 33-013-029	Pfeffer, R.	13	2745
LERC	Townsend, D. P.	CLEVELAND STATE UNIV	NAS 3-18547	Kasuba, R.	46	2997
LERC	Barile, S.	CLEVELAND STATE UNIV	NGL 36-025-001	Casper, K.	13	2998
LERC	Misencik, J. A.	COLORADO STATE UNIV	NGL 06-002-063	Smith, F. W.	46	1673
LERC	Priem, R. J.	COLORADO STATE UNIV	NGR 06-002-095	Mitchell, C. E.	42	1675
LERC	Kerslake, W. R.	COLORADO STATE UNIV	NGR 06-002-112	Wilbur, P. J.	46	1678
LERC	Serafini, J. S.	COLORADO STATE UNIV	NGR 06-002-147	Wilhelm, H. E.	42	1681
LERC	Danilowicz, R. L.	COLORADO STATE UNIV	NGR 06-002-159	Etters, R. D.	13	1682
LERC	Mirtich, M. J.	COLORADO STATE UNIV	NSG 3011	Kaufman, H. R.	42	1687
LERC	Dornitz, S.	COLORADO STATE UNIV	NSG 3038	Kaufman, H. R.	19	1688
LERC	Chubb, D. L.	COLORADO STATE UNIV	NSG 3060	Collins, G. J.	13	1689
LERC	Lalli, V. R.	COLUMBIA UNIVERSITY	NGL 33-008-090	Stern, T.	45	2765
LERC	Glasgow, T. K.	COLUMBIA UNIVERSITY	NSG 3050	Tien, J. K.	47	2781
LERC	Brown, G. V.	CORNELL UNIVERSITY	NGR 33-010-188	Krumhansl, J. A.	13	2815
LERC	Aron, P. R.	CORNELL UNIVERSITY	NGR 33-010-189	Ruoff, A. L.	47	2816
LERC	Marek, C. J.	CORNELL UNIVERSITY	NSG 3019	Gouldin, F. C.	41	2821
LERC	Baker, C. E.	GEORGE WASHINGTON U	NSR 09-010-027	Schiff, H. I.	59	1806
LERC	Hein, G. F.	GEORGIA INST OF TECH	NAS 3-17827	Zimmer, R. P.	49	1882
LERC	Huff, R. G.	GEORGIA INST OF TECH	NAS 3-17861	Strahle, W. C.	41	1883
LERC	Conroy, M. J.	GEORGIA INST OF TECH	NAS 3-18901	Bassett, H. L.	45	1884
LERC	Stevenson, S.	GEORGIA INST OF TECH	NAS 3-19700	Camp, A. A.	49	1885
LERC	Priem, R. J.	GEORGIA INST OF TECH	NGL 11-002-085	Zinn, B. T.	41	1903
LERC	Jones, W. R., Jr.	GEORGIA INST OF TECH	NGR 11-002-133	Winer, W. O.	46	1905
LERC	Priem, R. J.	GEORGIA INST OF TECH	NGR 11-002-179	Zinn, B. T.	42	1909
LERC	Huff, R. G.	GEORGIA INST OF TECH	NSG 3015	Strahle, W. C.	13	1917
LERC	Feiler, C. E.	GEORGIA INST OF TECH	NSG 3036	Zinn, B. T.	41	1918
LERC	Priem, R. J.	GEORGIA INST OF TECH	NSG 3052	Zinn, B. T.	42	1919
LERC	Lalli, V. R.	HARVARD UNIVERSITY	NGR 22-007-172	Brockett, R. W.	45	2312
LERC	Buckley, D. H.	HIRAM COLLEGE	NSG 3026	Wheeler, D. R.	47	3000
LERC	Sockol, P. M.	IOWA STATE UNIV	NSG 3033	Serovy, G. K.	41	2085

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
LERC	Zuk, J.	JACKSON STATE UNIV	NSG 3004	Chu, C. S.	49	2557
LERC	Brown, G. V.	KENT STATE UNIV	NGR 36-007-027	Johnson, D. L.	13	3001
LERC	Ashbrook, R. L.	LEHIGH UNIVERSITY	NGL 39-007-007	Kraft, R. W.	47	3099
LERC	Misencik, J. A.	LEHIGH UNIVERSITY	NGR 39-007-067	Wei, R. P.	47	3105
LERC	Hacker, P. T.	MASS INST OF TECH	NAS 3-17534	Senturia, S. D.	19	2335
LERC	Quatinetz, M.	MASS INST OF TECH	NGL 22-009-003	Grant, N. J.	47	2357
LERC	McNally, W. D.	MASS INST OF TECH	NGL 22-009-383	Kerrebrock, J. L.	41	2367
LERC	Siewert, R. D.	MASS INST OF TECH	NGR 22-009-339	Witmer, E. A.	41	2375
LERC	Mularz, E. J.	MASS INST OF TECH	NGR 22-009-378	Heywood, J. B.	43	2377
LERC	Baumeister, K. J.	MASS INST OF TECH	NGR 22-009-805	Ingard, K. U.	41	2406
LERC	Orange, T. W.	MASS INST OF TECH	NSG 3006	Kerrebrock, J. L.	41	2421
LERC	Weinberg, I.	MASS INST OF TECH	NSG 3017	Gatos, H. C.	13	2422
LERC	Chamis, C. C.	MASS INST OF TECH	NSG 3044	McGarry, F. G.	49	2423
LERC	Scheuermann, C. M.	MASS INST OF TECH	NSG 3046	Flemings, M. C.	47	2424
LERC	Gluyas, R. E.	MASS INST OF TECH	NSG 3061	Senturia, S. D.	19	2425
LERC	Vary, A.	MASS INST OF TECH	NSG 3064	Williams, J. H., Jr.	47	2426
LERC	Fleming, D. P.	MISSISSIPPI STATE U	NGR 25-001-050	Stiffler, A. K.	46	2572
LERC	Salzman, J. A.	NEW MEX ST U-LAS CR	NSG 3069	Armstrong, R. L.	13	2712
LERC	Neustadter, H. E.	NEW YORK UNIVERSITY	NGR 33-016-197	Hoydysh, W. G.	39	2844
LERC	Labus, T. L.	NEW YORK UNIVERSITY	NSG 3059	Keller, J. B.	49	2847
LERC	Godlewski, M. P.	NO CAROLINA STATE U	NGR 34-002-195	Hempfling, W. P.	45	2954
LERC	Lad, R. A.	NORTHWESTERN UNIV	NGL 14-007-081	Waber, J. T.	13	1964
LERC	Zaretsky, E. V.	NORTHWESTERN UNIV	NGR 14-007-084	Cheng, H.	46	1965
LERC	Grobman, J. S.	NORTHWESTERN UNIV	NGR 14-007-114	Kovitz, A. A.	41	1966
LERC	Behrendt, D. R.	NORTHWESTERN UNIV	NGR 14-007-131	Waber, J. T.	13	1968
LERC	Ludwig, L. P.	NORTHWESTERN UNIV	NSG 3039	Burton, R. A.	47	1970
LERC	Zaretsky, E. V.	NORTHWESTERN UNIV	NSG 3042	Cheng, H. S.	46	1971
LERC	Gray, H. R.	OHIO STATE UNIV	NGL 36-008-051	Beck, F. H.	47	3009
LERC	Cooper, D. W.	OHIO STATE UNIV	NSG 3005	Peake, W. H.	45	3021
LERC	McCormick, M. P.	OLD DOMINION UNIV	NSG 1090	Deepak, A.	31	3538
LERC	Harris, J. E.	OLD DOMINION UNIV	NSG 1094	Goglia, G. L.	41	3541
LERC	Heidmann, M. F.	PENNSYLVANIA STATE U	NAS 3-17855	Lakshminarayana, B.	41	3110
LERC	Britsch, W. R.	PENNSYLVANIA STATE U	NGL 39-009-001	Holl, J. W.	41	3117
LERC	Britsch, W. R.	PENNSYLVANIA STATE U	NGL 39-009-007	Lakshminarayana, B.	41	3120
LERC	Hirschberg, M. H.	PENNSYLVANIA STATE U	NGR 39-009-034	Zamrik, S. Y.	47	3126
LERC	Priem, R. J.	PENNSYLVANIA STATE U	NGR 39-009-077	Faeth, G. M.	42	3127
LERC	Stone, J. R.	PENNSYLVANIA STATE U	NGR 39-009-270	Arndt, R. E.	41	3131
LERC	Dittmar, J. H.	PENNSYLVANIA STATE U	NGR 39-009-275	Henderson, R. E.	46	3132
LERC	Heidmann, M. F.	PENNSYLVANIA STATE U	NSG 3012	Lakshminarayana, B.	41	3136
LERC	Sanders, W. A.	PENNSYLVANIA STATE U	NSG 3016	Bradt, R. C.	47	3137
LERC	Sanger, N. L.	PENNSYLVANIA STATE U	NSG 3031	Henderson, R. E.	41	3138
LERC	Sockol, P. M.	PENNSYLVANIA STATE U	NSG 3032	Lakshminarayana, B.	41	3139
LERC	Chamis, C. C.	PRINCETON UNIVERSITY	NGR 31-001-267	Dowell, E. H.	41	2669
LERC	Stone, J. R.	PRINCETON UNIVERSITY	NGR 31-001-307	Plett, E. G.	41	2674
LERC	Dunning, J. W., Jr.	PRINCETON UNIVERSITY	NGR 31-001-312	Glassman, I.	12	2675
LERC	Minner, G. L.	PURDUE UNIVERSITY	NAS 3-18010	Vaidya, P. G.	41	2039
LERC	Davison, H. W.	PURDUE UNIVERSITY	NGR 15-005-147	Lecuyer, M. R.	41	2055
LERC	Bishop, A. R.	PURDUE UNIVERSITY	NGR 15-005-162	Hoffman, J. D.	41	2058
LERC	Bishop, A. R.	PURDUE UNIVERSITY	NGR 15-005-191	Hoffman, J. D.	41	2061
LERC	Minner, G. L.	PURDUE UNIVERSITY	NSG 3029	Vaidya, P. G.	46	2062
LERC	Lad, R. A.	RENSSELAER POLY-NY	NGL 33-018-003	Wiberly, S. E.	47	2868
LERC	Bill, R. C.	RENSSELAER POLY-NY	NGR 33-018-152	Ling, F. F.	41	2872
LERC	Grimes, H. H.	RENSSELAER POLY-NY	NSG 3007	Diefendorf, R. J.	47	2876
LERC	Reinmann, J. J.	RENSSELAER POLY-NY	NSG 3057	Hickok, R. L.	13	2877
LERC	Lad, R. A.	RICE UNIVERSITY	NGL 44-006-001	Rorschach, H. E.	13	3279
LERC	Anderson, W. J.	ROCHESTER INST TECH	NSG 3072	Rieger, N. F.	46	2879
LERC	Colladay, R. S.	STANFORD UNIVERSITY	NAS 3-14336	Kays, W. M.	41	1311
LERC	Graham, R. W.	STANFORD UNIVERSITY	NGL 05-020-134	Kays, W. M.	46	1348

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LERC	Whittenberger, J. D.	STANFORD UNIVERSITY	NGR 05-020-671	Sherby, O. D.	47	1378
LERC	Levine, S. R.	STATE U NY-STONY BRK	NGR 33-015-160	Seigle, L. L.	47	2902
LERC	Gordon, S.	STATE U NY-STONY BRK	NGR 33-015-163	Berlad, A. L.	39	2903
LERC	Cochran, T. H.	STATE U NY-STONY BRK	NSG 3051	Berlad, A. L.	43	2910
LERC	Hirschberg, M. H.	SYRACUSE UNIVERSITY	NGR 33-022-157	Liu, H. W.	47	2919
LERC	Cassidy, J. F.	TENNESSEE STATE UNIV	NGR 43-014-002	Busby, M. R.	13	3202
LERC	Buckley, D. H.	TENNESSEE STATE UNIV	NGR 43-014-003	Sutherland, C. W.	47	3203
LERC	Priem, R. J.	TENNESSEE TECH U	NGR 43-003-015	Purdy, K. R.	46	3209
LERC	King, R. B.	TEXAS A&M UNIVERSITY	NAS 3-17508	Kuykendahl, W.	39	3295
LERC	Priem, R. J.	TULANE UNIVERSITY	NGR 19-002-030	O'Hara, J. C.	41	2183
LERC	Stephens, J. R.	UNIV CALIF-BERKELEY	NGR 05-003-562	Morris, J. W.	47	1461
LERC	Marek, C. J.	UNIV CALIF-BERKELEY	NSG 3028	Steele, C. R.	46	1469
LERC	Johnson, R. L.	UNIV CALIF-L ANGELES	NGR 05-007-338	Amstutz, H. C.	47	1533
LERC	Woollam, J. A.	UNIV CALIF-SAN DIEGO	NSG 3034	Oesterreicher, H.	47	1593
LERC	Cochran, T. H.	UNIV CALIF-SAN DIEGO	NSG 3047	Williams, F. A.	43	1594
LERC	Woollan, J. A.	UNIV CALIF-SAN DIEGO	NSG 3055	Webb, G. W.	19	1595
LERC	Brown, G. V.	UNIV OF CINCINNATI	NGR 36-004-054	Joiner, W. C.	13	3027
LERC	Haas, J. E.	UNIV OF CINCINNATI	NGR 36-004-055	Tabakoff, W.	46	3028
LERC	Olson, W. T.	UNIV OF CINCINNATI	NGR 36-004-056	Harness, D.	47	3029
LERC	Prust, H. W., Jr.	UNIV OF CINCINNATI	NGR 36-004-064	Tabakoff, W.	41	3031
LERC	Sundberg, G. R.	UNIV OF CINCINNATI	NSG 3022	Henderson, H. T.	45	3038
LERC	Grier, N. T.	UNIV OF CINCINNATI	NSG 3024	Nevin, J. H.	45	3039
LERC	Jones, R. E.	UNIV OF CINCINNATI	NSG 3045	Kauffman, C. W.	41	3040
LERC	Glassman, A. J.	UNIV OF CINCINNATI	NSG 3066	Tabakoff, W.	41	3041
LERC	Deissler, R. G.	UNIV COLORADO-BOLDR	NGR 06-003-208	Uberoi, M. S.	41	1715
LERC	Hirschberg, M. H.	UNIV COLORADO-BOLDR	NGR 06-003-236	Essenburg, F.	21	1720
LERC	Antoine, A. C.	UNIV OF CONNECTICUT	NGR 07-002-058	Wells, A. F.	12	1746
LERC	Hein, G. F.	UNIV OF DAYTON	NAS 3-19699	Engler, N. A.	73	3042
LERC	Post, R. E.	UNIV OF FLORIDA	NGL 10-005-022	Walker, R. D., Jr.	43	1849
LERC	Lad, R. A.	UNIV OF FLORIDA	NGL 10-005-039	Hren, J. J.	47	1850
LERC	Lad, R. A.	UNIV OF FLORIDA	NGL 10-005-080	Hummel, R. E.	47	1851
LERC	Soltis, D. G.	UNIV OF FLORIDA	NGR 10-005-182	Walker, R. D., Jr.	43	1857
LERC	Godlewski, M. P.	UNIV OF FLORIDA	NSG 3018	Lindholm, F. A.	45	1860
LERC	Bober, L. J.	UNIV ILLINOIS-URBANA	NGL 14-005-140	Chow, W. L.	41	2007
LERC	Karchmer, A. M.	UNIV ILLINOIS-URBANA	NGR 14-005-149	Jones, B. G.	41	2009
LERC	Karchmer, A. M.	UNIV ILLINOIS-URBANA	NGR 14-005-177	Jones, B. G.	41	2011
LERC	Marek, C. J.	UNIV ILLINOIS-URBANA	NGR 14-005-193	Strehlow, R. A.	41	2014
LERC	Dunning, J. W., Jr.	UNIV ILLINOIS-URBANA	NGR 14-005-200	Verdeyen, J. T.	13	2016
LERC	Siewert, R. D.	UNIV ILLINOIS-URBANA	NSG 3008	Strehlow, R. A.	13	2020
LERC	Cochran, T. H.	UNIV ILLINOIS-URBANA	NSG 3043	Strehlow, R. A.	43	2021
LERC	Siewert, R. D.	UNIV ILLINOIS-URBANA	NSG 3056	Strehlow, R. A.	49	2022
LERC	Sanders, W. A.	UNIV OF KENTUCKY	NGL 18-001-042	Leipold, M. H.	47	2145
LERC	Haggard, J. B., Jr.	UNIV OF KENTUCKY	NGR 18-001-083	Hsu, N. N.	13	2148
LERC	Gordon, S.	UNIV OF KENTUCKY	NGR 18-001-086	Conger, W. L.	12	2149
LERC	Brown, W. F., Jr.	UNIV OF KENTUCKY	NSG 3013	Conrad, H.	47	2151
LERC	Simoneau, R. J.	UNIV MARYLAND-COL PK	NGR 21-002-344	Sengers, J. V.	13	2251
LERC	Coles, W. D.	UNIV MARYLAND-COL PK	NGR 21-002-400	Spain, I. L.	13	2260
LERC	Stephens, J. R.	UNIV MARYLAND-COL PK	NSG 3001	Drew, H. D.	47	2274
LERC	Shannon, J. L., Jr.	UNIV OF MIAMI	NGR 10-007-118	Craig, H. L., Jr.	47	1871
LERC	Wright, D. U.	UNIV MICH-ANN ARBOR	NAS 3-19533	Ferris, J.	42	2462
LERC	Freche, J. C.	UNIV MICH-ANN ARBOR	NGL 23-005-005	Wilson, D. J.	47	2481
LERC	Priem, R. J.	UNIV MICH-ANN ARBOR	NGL 23-005-336	Nicholls, J. A.	46	2484
LERC	Haggard, J. B., Jr.	UNIV MICH-ANN ARBOR	NGR 23-005-536	Nicholls, J. A.	42	2493
LERC	Buckley, D. H.	UNIV MICH-ANN ARBOR	NGR 23-005-603	Ludema, K. C.	47	2499
LERC	Gutierrez, O. A.	UNIV MISS-UNIVERSITY	NAS 3-19431	Shields, F. D.	41	2576
LERC	Hyland, R. F.	UNIV OF NEW MEXICO	NAS 3-18522	Long, W. W.	49	2714
LERC	Hyland, R. F.	UNIV OF NEW MEXICO	NAS 3-19434	Shinnick, W. A.	49	2715
LERC	Feiler, C. E.	UNIV OF NOTRE DAME	NSG 3037	Atassi, H.	41	2069

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LERC	Lehtinen, B.	UNIV OF NOTRE DAME	NSG 3048	Leake, R. J.	45	2070
LERC	Kish, J. A.	UNIV OF NOTRE DAME	NSG 3070	Nahas, J. J.	19	2071
LERC	Fordyce, J. S.	UNIV OF PITTSBURGH	NAS 3-17658	Liu, C. C.	12	3149
LERC	Baker, C. E.	UNIV OF PITTSBURGH	NGR 39-011-161	Kaufman, F.	12	3162
LERC	Stephens, J. R.	UNIV OF PITTSBURGH	NGR 39-011-164	Meier, G. H.	47	3163
LERC	Leibecki, H. F.	UNIV OF PITTSBURGH	NSG 3002	Liu, C. C.	12	3164
LERC	O'Donnell, P. M.	UNIV OF PITTSBURGH	NSG 3010	Liu, C. C.	12	3165
LERC	Fordyce, J. S.	UNIV OF SO ALABAMA	NSG 3003	Weber, F. N., Jr.	13	1085
LERC	Dorsch, R. G.	UNIV OF SOUTHERN CAL	NAS 3-17857	Laufer, J.	41	1644
LERC	Olsen, W. A.	UNIV OF SOUTHERN CAL	NSG 3025	Laufer, J.	41	1657
LERC	Chubb, D. L.	UNIV SOUTHWESTERN LA	NSG 3049	Matase, J. J.	13	2187
LERC	Hady, W. F.	UNIV TENNESSEE-KNOXV	NGR 43-001-127	Milligan, M. W.	42	3221
LERC	Dittmar, J. H.	UNIV TENNESSEE-KNOXV	NGR 43-001-134	Lunsdaine, E.	41	3222
LERC	Reshotko, M.	UNIV TENNESSEE-KNOXV	NGR 43-001-135	Maus, J. R.	41	3223
LERC	Ramler, J. R.	UNIV OF TOLEDO	NAS 3-17826	Leininger, G. G.	49	3045
LERC	Willloh, R. G.	UNIV OF TOLEDO	NGR 36-010-024	Leininger, G. G.	49	3047
LERC	Lehtinen, B.	UNIV OF TOLEDO	NSG 3063	Leininger, G. G.	45	3049
LERC	Cunningham, R. E.	UNIV OF VIRGINIA	NGL 47-005-050	Gunter, E. J.	46	3567
LERC	Lad, R. A.	UNIV OF WASHINGTON	NGL 48-002-004	Mueller, J. I.	47	3638
LERC	Baumeister, K. J.	VIRGINIA POLY INST	NAS 3-18553	Robertson, R. A.	49	3593
LERC	Brandhorst, H. W., Jr.	WAYNE STATE UNIV	NGR 23-006-057	Wang, E. Y.	45	2514
LERC	Dunning, J. W., Jr.	WAYNE STATE UNIV	NGR 23-006-063	Wang, E. Y.	45	2515
LERC	Brandhorst, H. W., Jr.	WAYNE STATE UNIV	NSG 3014	Wang, E. Y.	13	2517
LERC	Dunning, J. W., Jr.	WAYNE STATE UNIV	NSG 3035	Yu, F. T.	45	2518
LERC	Phillips, B.	WEST VIRGINIA UNIV	NAS 3-19725	Wen, C. Y.	49	3659
LERC	Rice, E. J.	WICHITA STATE UNIV	NGR 17-003-018	Eversman, W.	13	2133
LERC	Serafini, T. T.	WILBERFORCE UNIV	NSG 3067	Stickney, P. B.	12	3053
LERC	Baker, C. E.	YORK UNIVERSITY	NGR 52-134-005	Schiff, H. I.	31	3722
LERC	Morris, J. F.	OREGON GRADUATE CTR	NSG 3054	Swanson, L. W.	47	3072
MSFC	Downs, S. W.	ALABAMA A&M UNIV	NGR 01-001-023	Sharma, G. C.	51	1003
MSFC	McDonough, G. F.	ALABAMA A&M UNIV	NGR 01-001-025	Manger, M. C.	39	1005
MSFC	Parnell, T. A.	ALABAMA A&M UNIV	NSG 8001	George, M. C.	11	1006
MSFC	Kurtz, R. L.	ALABAMA A&M UNIV	NSG 8011	Lee, C. T.	13	1007
MSFC	Lowrey, D. O.	ALABAMA A&M UNIV	NSG 8013	Weathers, G.	45	1008
MSFC	Gross, K. W.	ALABAMA A&M UNIV	NSG 8022	Saha, H.	13	1009
MSFC	Jex, D. W.	ATHENS COLLEGE	NAS 8-28058	McNutt, R. C.	13	1010
MSFC	Zwiener, J. M.	ATHENS COLLEGE	NAS 8-30561	McNutt, R. C.	13	1011
MSFC	Linton, R. C.	ATHENS COLLEGE	NAS 8-30813	Short, W.	13	1012
MSFC	Moore, W. W., Jr.	ATHENS COLLEGE	NAS 8-30880	Martin, A. M., III	13	1013
MSFC	Curry, J. E.	ATLANTA UNIVERSITY	NSG 8019	Reed, J. L.	12	1875
MSFC	Emens, F. H.	AUBURN UNIV-AUBURN	NAS 8-20765	Irwin, J. D.	45	1014
MSFC	Lowrey, D. O.	AUBURN UNIV-AUBURN	NAS 8-26193	Honnell, M. A.	45	1015
MSFC	Jones, B. P.	AUBURN UNIV-AUBURN	NAS 8-26579	Vachon, R. I.	13	1016
MSFC	White, J. B.	AUBURN UNIV-AUBURN	NAS 8-26930	Carroll, B. D.	45	1017
MSFC	Craighead, P. T.	AUBURN UNIV-AUBURN	NAS 8-29852	Boland, J. S., III	49	1018
MSFC	Downs, S. W.	AUBURN UNIV-AUBURN	NAS 8-29856	Hagler, T. B.	51	1019
MSFC	McKannan, E. C.	AUBURN UNIV-AUBURN	NAS 8-29881	Vachon, R. I.	72	1020
MSFC	Duncan, J. R., Jr.	AUBURN UNIV-AUBURN	NAS 8-30248	Bennett, A. G.	41	1021
MSFC	Cummings, R. E.	AUBURN UNIV-AUBURN	NAS 8-30654	Vachon, R. I.	21	1022
MSFC	Gould, J. M.	AUBURN UNIV-AUBURN	NAS 8-31190	Carroll, B. D.	45	1023
MSFC	Keer, J. H.	AUBURN UNIV-AUBURN	NAS 8-31223	Pinson, L. J.	45	1024
MSFC	Shackelford, B. W.	AUBURN UNIV-AUBURN	NCA 8-106	Sforzini, R. H.	12	1025
MSFC	Shackelford, B. W.	AUBURN UNIV-AUBURN	NCA 8-108	Sforzini, R. H.	43	1026
MSFC	Cook, L. J.	AUBURN UNIV-AUBURN	NCA 8-109	Bell, L.	21	1027
MSFC	Hastings, L. J.	BALL STATE UNIVERSTY	NCA 8-101	Cosby, R. M.	13	2026
MSFC	Hastings, L. J.	BALL STATE UNIVERSTY	NCA 8-103	Cosby, R. M.	13	2027
MSFC	Kent, M. I.	BENEDICT COLLEGE	NSG 8004	Kinard, J. T.	12	3180
MSFC	Krome, H. O.	CALIF INST OF TECH	NAS 8-27403	Stone, E. C.	11	1192

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MSFC	Krome, H. O.	CALIF INST OF TECH	NAS 8-27978	Stone, E. C.	11	1193
MSFC	Reichmann, E. J.	CALIF INST OF TECH	NAS 8-28028	Zirin, H.	11	1194
MSFC	Gross, L. A.	CALIF INST OF TECH	NAS 8-29313	Acosta, A. J.	46	1195
MSFC	Wdowiak, T. J.	CASE WESTERN RESERVE	NAS 8-29707	Bidelman, W.	11	2973
MSFC	Brown, S. C.	CITY COLLEGE OF N Y	NAS 8-29616	Pierson, W. J.	33	2742
MSFC	Turner, R. E.	COLORADO STATE UNIV	NAS 8-28590	Sadeh, W. Z.	39	1665
MSFC	Cliff, W. C.	COLORADO STATE UNIV	NAS 8-29583	Cermak, J. E.	44	1666
MSFC	Berge, L. H.	COLORADO STATE UNIV	NAS 8-30250	Jones, T. B.	45	1667
MSFC	Cliff, W. C.	COLORADO STATE UNIV	NAS 8-31237	Winn, C. B.	46	1668
MSFC	Fichtl, G. H.	COLORADO STATE UNIV	NAS 8-31347	Winn, C. B.	49	1669
MSFC	Manning, H. S.	COLUMBIA UNIVERSITY	NAS 8-30532	Novick, R.	11	2762
MSFC	Manning, H. S.	COLUMBIA UNIVERSITY	NAS 8-30753	Novick, R.	11	2763
MSFC	Allen, R. E.	CORNELL UNIVERSITY	NAS 8-31513	Rubin, A. L.	99	2791
MSFC	Paludan, C. T.	DILLARD UNIVERSITY	NSG 8018	Rogers, R.	39	2156
MSFC	Turner, R. E.	DREXEL UNIVERSITY	NAS 8-31235	Kreitzberg, C. W.	31	3095
MSFC	Kroes, R. L.	FISK UNIVERSITY	NGR 43-021-002	Silberman, E.	13	3197
MSFC	Parnell, T. A.	FISK UNIVERSITY	NSG 8007	Neugebauer, G.	13	3198
MSFC	Allen, R. E.	GEORGETOWN UNIV	NAS 8-29778	Leise, E. M.	47	1807
MSFC	Kerr, J. H.	GEORGIA INST OF TECH	NAS 8-28591	Callor, W. R.	45	1889
MSFC	Hasemeyer, E. A.	GEORGIA INST OF TECH	NAS 8-28735	Rogers, J. L.	47	1890
MSFC	Smith, O. E.	GEORGIA INST OF TECH	NAS 8-29753	Justus, C. G.	13	1891
MSFC	Kerr, J. H.	GEORGIA INST OF TECH	NAS 8-29860	Hart, R. K.	45	1892
MSFC	Kerr, J. H.	GEORGIA INST OF TECH	NAS 8-30246	Callen, W. R.	13	1893
MSFC	Kerr, J. H.	GEORGIA INST OF TECH	NAS 8-30534	Shackelford, R. G.	99	1894
MSFC	Thomas, J. M.	GEORGIA INST OF TECH	NAS 8-30617	Hanagud, S. V.	19	1895
MSFC	Paludan, C. T.	GEORGIA INST OF TECH	NAS 8-30653	Dees, J. W.	39	1896
MSFC	Smith, O. E.	GEORGIA INST OF TECH	NAS 8-30657	Justus, C. G.	49	1897
MSFC	Huggins, C. T.	GEORGIA INST OF TECH	NAS 8-30919	Walsh, J. R.	21	1898
MSFC	Kerr, J. H.	GEORGIA INST OF TECH	NAS 8-31193	Callen, W. R.	13	1899
MSFC	Kerr, J. H.	GEORGIA INST OF TECH	NAS 8-31344	Walsh, J. R.	13	1900
MSFC	Bensko, J., Jr.	GEORGIA SOUTHWTN COL	NAS 8-30884	Arden, D. D.	32	1923
MSFC	Kroes, R. L.	GRAMBLING STATE UNIV	NGR 19-011-016	Murty, A. N.	13	2160
MSFC	Unavailable	HARVARD UNIVERSITY	NAS 5-3949	Goldberg, L.	11	2300
MSFC	Snoddy, W. C.	HARVARD UNIVERSITY	NAS 8-31374	Vaiana, G. S.	13	2305
MSFC	Wolverton, B. C.	JACKSON STATE UNIV	NGR 25-011-005	Sekhon, B. S.	39	2556
MSFC	Wolverton, B. C.	JACKSON STATE UNIV	NSG 8015	Perkins, J.	39	2558
MSFC	Roberts, W. T.	JOHNS HOPKINS UNIV	NAS 8-31413	Feldman, P. D.	31	2204
MSFC	Patterson, W. J.	KENTUCKY STATE UNIV	NSG 8008	Marano, G. A.	12	2140
MSFC	Bond, J. B.	LEHIGH UNIVERSITY	NAS 8-28654	Vanderhoff, J. W.	47	3097
MSFC	Hamby, H. G.	LA STATE U-BAT ROUGE	NAS 8-30380	Farmer, R. C.	13	2164
MSFC	Paludan, C. T.	LA STATE U-BAT ROUGE	NAS 8-30620	Maples, D.	39	2165
MSFC	McDonough, G. F.	UNIV OF NEW ORLEANS	NAS 8-28955	Saussy, G. A.	39	2185
MSFC	Hasemeyer, E. A.	MASS INST OF TECH	NAS 8-24364	Masubuchi, K.	49	2341
MSFC	Bodie, W. G.	MASS INST OF TECH	NAS 8-27972	Bradt, H. V.	11	2342
MSFC	Jordan, W.	MASS INST OF TECH	NAS 8-27975	Lewin, W. H.	11	2343
MSFC	Borelli, M. T.	MASS INST OF TECH	NAS 8-28055	Whitney, D. E.	46	2344
MSFC	Adams, W. R.	MASS INST OF TECH	NAS 8-28306	Gatos, H. C.	19	2345
MSFC	Decker, R.	MASS INST OF TECH	NAS 8-30301	Boyd, P.	13	2346
MSFC	Manning, H. S.	MASS INST OF TECH	NAS 8-30531	Clark, G. W.	11	2347
MSFC	Davidson, M. C.	MASS INST OF TECH	NAS 8-30537	Gatos, H. C.	47	2348
MSFC	Adams, W. R.	MASS INST OF TECH	NAS 8-30576	Gatos, H. C.	19	2349
MSFC	Manning, H. S.	MASS INST OF TECH	NAS 8-30752	Clark, G. W.	11	2350
MSFC	Hill, C. K.	MASS INST OF TECH	NAS 8-31149	Hart, J. E.	32	2351
MSFC	Chassay, R. P.	MASS INST OF TECH	NAS 8-31350	Uhlmann, D. R.	47	2352
MSFC	Dalins, I.	MASS INST OF TECH	NGL 22-009-125	Gatos, H. C.	13	2364
MSFC	Patterson, W. C.	MEMPHIS ST UNIV	NAS 8-31189	Perry, E.	46	3199
MSFC	Hollis, B. R., Jr.	MISSISSIPPI STATE U	NAS 8-26749	Gassaway, J. D.	13	2562
MSFC	McDonough, G. F.	MISSISSIPPI STATE U	NAS 8-29036	McKee, J. C., Jr.	39	2563

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
MSFC	Pitts, E. H.	MISSISSIPPI STATE U	NAS 8-30618	Rogers, T. W.	45	2564
MSFC	Daniels, J. L., Jr.	MISSISSIPPI STATE U	NAS 8-30623	Miller, W. F.	39	2565
MSFC	Keer, J. H.	MISSISSIPPI STATE U	NAS 8-31373	Ingels, F. M.	45	2566
MSFC	King, H. M.	MISSISSIPPI STATE U	NCA 8-107	Hall, W. B.	47	2569
MSFC	Wolverton, B. C.	MISS VALLEY ST UNIV	NSG 8009	Sethi, S. L.	51	2575
MSFC	Stephens, J. B.	MOREHOUSE COLLEGE	NGL 11-008-001	Gales, J. N.	12	1924
MSFC	Shriver, E. L.	MOREHOUSE COLLEGE	NSG 8014	Spight, C.	13	1927
MSFC	Stone, N. H.	MOREHOUSE COLLEGE	NSG 8020	Turner, J. M.	13	1928
MSFC	Patterson, W. J.	MORRIS BROWN COLLEGE	NSG 8027	Weaver, F.	12	1929
MSFC	Brown, S. C.	NEW YORK UNIVERSITY	NAS 8-29578	Pierson, W. J.	33	2836
MSFC	Downs, S. W.	NORTH GEORGIA COL	NAS 8-30619	Biesbrock, J. A.	51	1930
MSFC	Kent, M. I.	OAKWOOD COLLEGE	NSG 8017	Richardson, D.	12	1031
MSFC	Costes, N. C.	OHIO STATE UNIV	NAS 8-31195	Mueller, I. I.	19	3007
MSFC	Bannister, T. C.	PAINE COLLEGE	NSG 8002	Miller, J. E.	13	1931
MSFC	Fichtl, G. H.	PENNSYLVANIA STATE U	NAS 8-21140	Blackadar, A. K.	31	3114
MSFC	Fichtl, G. H.	PENNSYLVANIA STATE U	NAS 8-27334	Long, S. R.	31	3115
MSFC	Davidson, M. C.	RENSSELAER POLY-NY	NAS 8-26146	Petersen, G. W.	47	2865
MSFC	Adams, W. R.	RENSSELAER POLY-NY	NAS 8-28307	Wiedemeier, H.	19	2866
MSFC	Adams, W. R.	RENSSELAER POLY-NY	NAS 8-30578	Wiedemeier, H.	19	2867
MSFC	Urban, E. W.	SO CAROLINA ST COL	NSG 8021	Payne, J. E.	13	3187
MSFC	Kent, M. I.	SO UNIV-BATON ROUGE	NGR 19-005-003	Liu, K. H.	19	2170
MSFC	Unavailable	SO UNIV-BATON ROUGE	NSG 8016	Scott, R. L.	13	2174
MSFC	Williamson, J. G.	SO UNIV-BATON ROUGE	NSG 8025	Tabony, J.	46	2175
MSFC	Urban, E. W.	STANFORD UNIVERSITY	NGR 05-020-019	Everitt, C. W.	13	1360
MSFC	Gary, G. A.	STATE UNIV NY-ALBANY	NAS 8-30251	Weinberg, J. L.	13	2882
MSFC	Allen, R. E.	STATE UNIV NY-BUFFAL	NAS 8-29745	Bigazzi, P. E.	13	2887
MSFC	Allen, R. E.	STATE UNIV NY-BUFFAL	NAS 8-31292	Bigazzi, P. E.	51	2888
MSFC	Van Vleck, E.	STATE UNIV NY-BUFFAL	NAS 8-31434	Jain, A. K.	21	2889
MSFC	Dalins, I.	TALLADEGA COLLEGE	NGR 01-007-009	Breecher, J.	13	1032
MSFC	McKannan, E. C.	TALLADEGA COLLEGE	NSG 8010	Morrison, R. A.	47	1034
MSFC	Harman, H. S.	TENNESSEE STATE UNIV	NSG 8012	Packman, P. F.	46	3205
MSFC	Humphries, W. R.	TENNESSEE TECH U	NAS 8-31564	Griggs, E. I.	31	3206
MSFC	Humphries, W. R.	TENNESSEE TECH U	NCA 8-102	Griggs, E. I.	45	3207
MSFC	Nowakowski, M. F.	TEXAS A&M UNIVERSITY	NAS 8-26379	Porter, W. A.	45	3301
MSFC	Turner, R. E.	TEXAS A&M UNIVERSITY	NAS 8-26751	Scoggins, J. R.	31	3302
MSFC	Fichtl, G. H.	TEXAS A&M UNIVERSITY	NAS 8-29582	Brundidge, K. C.	31	3303
MSFC	Fichtl, G. H.	TEXAS A&M UNIVERSITY	NAS 8-29764	Scoggins, J. R.	31	3304
MSFC	Nowakowski, M. F.	TEXAS A&M UNIVERSITY	NAS 8-29851	Porter, W. A.	13	3305
MSFC	Key, J. E.	TEXAS A&M UNIVERSITY	NAS 8-31332	Strickland, J. A.	21	3306
MSFC	Guest, S. H.	TUSKEGEE INSTITUTE	NGR 01-005-010	Lenzo, C. S.	41	1036
MSFC	Crowell, C. S.	TUSKEGEE INSTITUTE	NSG 8003	Doreswamy, C. V.	45	1038
MSFC	Parnell, T. A.	UNIV ALA-HUNTSVILLE	NAS 8-24908	Hiser, H. W.	11	1040
MSFC	Parnell, T. A.	UNIV ALA-HUNTSVILLE	NAS 8-24953	Gregory, J. C.	13	1041
MSFC	Sorensen, V. C.	UNIV ALA-HUNTSVILLE	NAS 8-26055	Beltz, J. S.	73	1042
MSFC	Lacy, L. L.	UNIV ALA-HUNTSVILLE	NAS 8-27809	Otto, G. H.	47	1043
MSFC	Hagyard, M. J.	UNIV ALA-HUNTSVILLE	NAS 8-28097	Wu, S. T.	13	1044
MSFC	Swenson, G. R.	UNIV ALA-HUNTSVILLE	NAS 8-28248	Hermann, R.	42	1045
MSFC	Adams, W. R.	UNIV ALA-HUNTSVILLE	NAS 8-28304	Walter, H. U.	19	1046
MSFC	Allums, S. L.	UNIV ALA-HUNTSVILLE	NAS 8-28736	Shih, C. C.	46	1047
MSFC	Decher, R.	UNIV ALA-HUNTSVILLE	NAS 8-29316	Hendricks, J. B.	99	1048
MSFC	Davidson, M. C.	UNIV ALA-HUNTSVILLE	NAS 8-29542	Castle, J. G., Jr.	47	1049
MSFC	Swenson, G. R.	UNIV ALA-HUNTSVILLE	NAS 8-29543	Wu, S. T.	13	1050
MSFC	Zwiener, J. M.	UNIV ALA-HUNTSVILLE	NAS 8-29650	Walter, H. U.	13	1051
MSFC	Paludan, C. T.	UNIV ALA-HUNTSVILLE	NAS 8-30216	Doyle, F. L.	39	1052
MSFC	Urban, E. W.	UNIV ALA-HUNTSVILLE	NAS 8-30244	Otto, G. H.	13	1053
MSFC	Smith, R. E.	UNIV ALA-HUNTSVILLE	NAS 8-30247	Hung, R. J.	31	1054
MSFC	Fields, S. A.	UNIV ALA-HUNTSVILLE	NAS 8-30286	Walters, H. U.	49	1055
MSFC	Chappell, C. R.	UNIV ALA-HUNTSVILLE	NAS 8-30563	Sung, C. C.	13	1056

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MSFC	Smith, R. E.	UNIV ALA-HUNTSVILLE	NAS 8-30616	Hung, R. J.	31	1057
MSFC	Brown, R. L.	UNIV ALA-HUNTSVILLE	NAS 8-30737	Engle, H. A.	99	1058
MSFC	Morton, R. R.	UNIV ALA-HUNTSVILLE	NAS 8-30772	Rossing, L. M.	51	1059
MSFC	Zwiener, J. M.	UNIV ALA-HUNTSVILLE	NAS 8-30774	Castle, J. G., Jr.	47	1060
MSFC	Gravette, M. C.	UNIV ALA-HUNTSVILLE	NAS 8-30885	Schroer, B. J.	39	1061
MSFC	Morton, R. R.	UNIV ALA-HUNTSVILLE	NAS 8-31169	Grohse, E. W.	44	1062
MSFC	Parnell, T. A.	UNIV ALA-HUNTSVILLE	NAS 8-31170	Gregory, J. C.	13	1063
MSFC	West, G. S., Jr.	UNIV ALA-HUNTSVILLE	NAS 8-31171	Hung, R. J.	39	1064
MSFC	Detko, G. J.	UNIV ALA-HUNTSVILLE	NAS 8-31174	Luttges, W. E.	19	1065
MSFC	Teuber, D. L.	UNIV ALA-HUNTSVILLE	NAS 8-31194	Knezovich, F. M.	13	1066
MSFC	Bowden, D. R.	UNIV ALA-HUNTSVILLE	NAS 8-31293	Christensen, D. L.	13	1067
MSFC	Smith, R. E.	UNIV ALA-HUNTSVILLE	NAS 8-31321	Hung, R. J.	31	1068
MSFC	Bensko, J., Jr.	UNIV ALA-HUNTSVILLE	NAS 8-31345	Doyle, F. L.	32	1069
MSFC	Randall, J. L.	UNIV ALA-TUSCALOOSA	NAS 8-25562	Webb, W. E.	31	1073
MSFC	Clarke, W. D.	UNIV ALA-TUSCALOOSA	NAS 8-28019	Hill, J. L.	49	1074
MSFC	Bannister, T. C.	UNIV ALA-TUSCALOOSA	NAS 8-28098	Miyagawa, I.	13	1075
MSFC	Morton, R. R.	UNIV ALA-TUSCALOOSA	NAS 8-29100	April, G. C.	49	1076
MSFC	Schafer, C. F.	UNIV ALA-TUSCALOOSA	NAS 8-29494	De Smet, D. J.	13	1077
MSFC	Bensko, J., Jr.	UNIV ALA-TUSCALOOSA	NAS 8-29936	Hughes, T. H.	32	1078
MSFC	Bensko, J., Jr.	UNIV ALA-TUSCALOOSA	NAS 8-29937	Stow, S. H.	32	1079
MSFC	Moore, W. W., Jr.	UNIV ALA-TUSCALOOSA	NAS 8-30479	Liu, H. K.	13	1080
MSFC	Schutzenhofer, L. A.	UNIV ALA-TUSCALOOSA	NAS 8-30624	Doughty, J. O.	46	1081
MSFC	Digesu, F. E.	UNIV ALA-TUSCALOOSA	NAS 8-30886	Ainsworth, O. R.	21	1082
MSFC	Miller, E. R.	UNIV ALA-TUSCALOOSA	NAS 8-31343	Fay, T. D.	11	1083
MSFC	Griner, D. B.	UNIV OF ARIZONA	NAS 8-27804	Tiftt, W. G.	13	1112
MSFC	Wyman, C. L.	UNIV OF ARIZONA	NAS 8-27863	Shack, R. V.	13	1113
MSFC	Kurtz, R. L.	UNIV OF ARIZONA	NAS 8-28661	Jacobs, S. F.	13	1114
MSFC	Allen, R. E.	UNIV OF ARIZONA	NAS 8-29566	Bier, M.	13	1115
MSFC	Lundquist, C. A.	UNIV OF ARIZONA	NAS 8-31188	Sonett, C. P.	11	1116
MSFC	Lundquist, C. A.	UNIV OF ARIZONA	NAS 8-31192	Sonett, C. P.	11	1117
MSFC	Miller, E. R.	UNIV OF ARIZONA	NAS 8-31196	Sonett, C. P.	11	1118
MSFC	Allen, R. E.	UNIV OF ARIZONA	NAS 8-31537	Bier, M.	47	1119
MSFC	Ondrak, B. T.	UNIV CALIF-BERKELEY	NAS 8-29603	Price, P. B.	13	1416
MSFC	Roberts, W. T.	UNIV CALIF-BERKELEY	NAS 8-31346	Mozer, F. S.	19	1417
MSFC	Adams, W. R.	UNIV CALIF-L ANGELES	NAS 8-28310	Yue, A. S.	19	1500
MSFC	Seltzer, S. M.	UNIV CALIF-L ANGELES	NAS 8-28358	Likins, P. W.	49	1501
MSFC	Johnston, M. H.	UNIV CALIF-L ANGELES	NAS 8-29854	Yue, A. S.	12	1502
MSFC	Adams, W. R.	UNIV CALIF-L ANGELES	NAS 8-30579	Yue, A. S.	19	1503
MSFC	Jordan, W. E.	UNIV CALIF-SAN DIEGO	NAS 8-27974	Peterson, L. E.	11	1560
MSFC	Chappell, C. R.	UNIV CALIF-SAN DIEGO	NAS 8-31145	McIlwain, C. E.	13	1561
MSFC	Dabbs, J. R.	UNIV OF CHICAGO	NAS 8-27407	Meyer, P.	11	1980
MSFC	Bass, B.	UNIV COLORADO-BOLDR	NAS 8-31378	Dulk, G. A.	13	1701
MSFC	Hasemeyer, E. A.	UNIV OF CONNECTICUT	NAS 8-28734	Katahis, T. Z.	47	1744
MSFC	Camp, D. W.	UNIV OF DAYTON	NAS 8-31294	Leurs, J. K.	41	3044
MSFC	Schell, J. T.	UNIV OF FLORIDA	NAS 8-20247	Patterson, E. P.	12	1841
MSFC	Clingman, J. H.	UNIV OF GEORGIA	NAS 8-31565	Burkhard, D. G.	13	1934
MSFC	McGuire, J. P.	UNIV OF HAWAII	NAS 8-27950	Jefferies, J. T.	11	1941
MSFC	Paludan, C. T.	UNIV OF KENTUCKY	NAS 8-31006	Graves, D. H.	39	2142
MSFC	Gross, L. A.	UNIV OF LOUISVILLE	NAS 8-31233	Childs, D. A.	42	2152
MSFC	Patterson, J. W.	UNIV OF MASS-AMHERST	NAS 8-29073	Crossley, F. R.	46	2442
MSFC	Devries, L. L.	UNIV MICH-ANN ARBOR	NAS 8-28294	Cicerone, R. J.	13	2477
MSFC	Devries, L. L.	UNIV MICH-ANN ARBOR	NAS 8-30625	Stedman, D. H.	31	2478
MSFC	Roberts, W. T.	UNIV MICH-ANN ARBOR	NAS 8-31397	Nagy, A. F.	19	2479
MSFC	Krome, H. O.	U MINN-MNPLS-ST PAUL	NAS 8-27977	Waddington, C. J.	11	2530
MSFC	Roberts, W. T.	U MINN-MNPLS-ST PAUL	NAS 8-31510	Winckler, J. R.	13	2531
MSFC	Smith, R. E.	UNIV MO-COLUMBIA	NAS 8-31150	Plummer, P. L.	31	2585
MSFC	Smi, R. E.	UNIV MO-ROLLA	NAS 8-31538	Stampfer, J. F., Jr.	13	2591
MSFC	Smith, R. E.	UNIV OF NEVADA-RENO	NAS 8-31441	Telford, J. W.	19	2622

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MSFC	Smith, R. E.	UNIV OF NEVADA-RENO	NAS 8-31470	Squires, P.	31	2623
MSFC	Parnell, T. A.	UNIV N CAR-CHPL HILL	NAS 8-26601	Childs, C. B.	13	2968
MSFC	Turner, R. E.	UNIV OKLAHOMA-NORMAN	NAS 8-28659	Inman, R. L.	31	3065
MSFC	Stephens, J. B.	UNIV OKLAHOMA-NORMAN	NAS 8-30175	Canfield, J. M.	41	3066
MSFC	Turner, R. E.	UNIV OKLAHOMA-NORMAN	NAS 8-31333	Inman, R. L.	31	3067
MSFC	Cliff, W. C.	UNIV OKLAHOMA-NORMAN	NAS 8-31377	Inman, R. L.	31	3068
MSFC	Allen, R. E.	UNIV ORGEON-HLTH CTR	NAS 8-30887	Knox, R. J.	51	3083
MSFC	Ives, R. E.	UNIV ORGEON-HLTH CTR	NAS 8-31386	Brooks, D. E.	59	3084
MSFC	Parnell, T. A.	UNIV SAN FRANCISCO	NAS 8-26758	Benton, E. V.	13	1614
MSFC	Seltzer, S. M.	UNIV OF SANTA CLARA	NAS 8-27799	Siljak, D. D.	49	1623
MSFC	Lowrey, D. O.	UNIV OF SO CAROLINA	NAS 8-28660	Fellers, R. G.	45	3188
MSFC	Carvso, S. V.	UNIV OF SO FLORIDA	NAS 8-31172	Sergent, J.	45	1873
MSFC	Adams, W. R.	UNIV OF SOUTHERN CAL	NAS 8-28305	Wilcox, W. R.	19	1646
MSFC	Ruff, R. C.	UNIV OF SOUTHERN CAL	NAS 8-29847	Wilcox, W. R.	13	1647
MSFC	Berry, E. H.	UNIV TENNESSEE-KNOXV	NAS 8-27296	Kennedy, E. J.	42	3211
MSFC	Borelli, M. T.	UNIV TENNESSEE-KNOXV	NAS 8-29271	Gonzalez, R. C.	45	3212
MSFC	Fichtl, G. H.	UNIV TENNESSEE-KNOXV	NAS 8-29584	Frost, W.	46	3213
MSFC	Fisher, P. H., Jr.	UNIV TENNESSEE-KNOXV	NAS 8-30256	Liu, T. C.	45	3214
MSFC	Cummings, R. E.	UNIV TENNESSEE-KNOXV	NAS 8-30878	Gonzalez, R. C.	39	3215
MSFC	Fortenberry, W. H.	UNIV TENNESSEE-KNOXV	NAS 8-30879	Sherman, G. R.	21	3216
MSFC	Escue, W. T.	UNIV TENNESSEE-KNOXV	NAS 8-31143	Rehder, J. B.	39	3217
MSFC	Hill, C. K.	UNIV TENNESSEE-KNOXV	NAS 8-31197	Connell, J. R.	46	3218
MSFC	Fehlberg, E.	UNIV TEXAS-AUSTIN	NAS 8-30245	Bettis, D. G.	21	3369
MSFC	Key, J. E.	UNIV TEXAS-AUSTIN	NAS 8-30622	Becker, E. B.	41	3370
MSFC	Unavailable	UNIV TEXAS-AUSTIN	NAS 8-31459	Unavailable	11	3371
MSFC	Key, J. E.	UNIV TEXAS-AUSTIN	NAS 8-31566	Dunham, R. B.	21	3372
MSFC	Patterson, W. J.	UNIV OF UTAH	NAS 8-30253	Andrade, J. D.	12	3455
MSFC	Ponder, T. W.	UNIV WISC-MADISON	NAS 8-21015	Kraushaar, W. L.	11	3682
MSFC	Williams, J. R.	UNIV WISC-MADISON	NAS 8-28733	Heine, R. W.	47	3683
MSFC	Odell, C. R.	UNIV WISC-MADISON	NAS 8-29387	Code, A. D.	11	3684
MSFC	Allen, R. V.	VANDERBILT UNIVERSTY	NAS 8-29460	Kinser, D. L.	47	3234
MSFC	Nichols, R. L.	VANDERBILT UNIVERSTY	NAS 8-30656	Kinser, D. L.	13	3235
MSFC	Caruso, S. V.	VANDERBILT UNIVERSTY	NAS 8-30883	Kinser, D. L.	47	3236
MSFC	Brennecke, M. W.	VANDERBILT UNIVERSTY	NAS 8-31556	Wert, J. J.	47	3237
MSFC	Yates, I. C., Jr.	WASHINGTON ST UNIV	NAS 8-29725	Johnson, A. A.	47	3657
MSFC	Jones, J. H.	WASHINGTON UNIVERSTY	NAS 8-26084	Rodin, E. Y.	13	2599
MSFC	Krome, H. O.	WASHINGTON UNIVERSTY	NAS 8-27976	Israel, M. H.	11	2600
MSFC	Allen, R. E.	WAYNE STATE UNIV	NAS 8-29823	Brown, R. K.	47	2513
NSTL	Wolverton, B. C.	ALCORN STATE UNIV	NSG 8005	Naqvi, S. M.	39	2554
NSTL	Wolverton, B. C.	JACKSON STATE UNIV	NSG 8023	Sekhon, B. S.	39	2559
NSTL	Wolverton, B. C.	JACKSON STATE UNIV	NSG 8026	Shore, F.	39	2560
NSTL	Joyce, A. T.	JACKSON STATE UNIV	NSG 9016	Nelson, F. R.	39	2561
NSTL	Montgomery, W. D.	MISSISSIPPI STATE U	NAS13-10	Forbes, R. E.	49	2568
NSTL	Thomann, G. C.	TULANE UNIVERSITY	NAS 9-14501	Thein, L. B.	32	2179
NSTL	Wolverton, B. C.	UNIV OF FLORIDA	NGL 10-005-127	Sekhon, B. S.	41	1853
NSTL	Vitale, J. A.	UNIV SO MISSISSIPPI	NGL 25-005-007	Pinson, J. W.	39	2577
WFC	Rossi, L. C.	CITY COLLEGE OF N Y	NAS 6-2439	Pierson, W. J.	32	2741
WFC	Oberholtzer, J. D.	COLLEGE OF WM & MARY	NGR 47-006-064	Aceto, H., Jr.	59	3485
WFC	Stanley, H. R.	COLUMBIA UNIVERSITY	NAS 6-2455	Kuo, J. T.	33	2760
WFC	Stanley, H. R.	COLUMBIA UNIVERSITY	NAS 6-2519	Talwani, M.	32	2761
WFC	Holland, A. C.	DC TEACHERS COLLEGE	NGR 09-053-002	Curtis, W. C.	19	1778
WFC	Kim, H. H.	HAMPTON INSTITUTE	NGR 47-020-006	Trehan, A. K.	19	3495
WFC	Stanley, H. R.	NO CAROLINA STATE U	NAS 6-2617	Hiser, H. W.	33	2945
WFC	Stanley, H. R.	OHIO STATE UNIV	NAS 6-2484	Rapp, R. H.	32	3006
WFC	Spurling, J. R.	OLD DOMINION UNIV	NSG 6002	Bandy, A. R.	31	3560
WFC	Duke, J. R.	PENNSYLVANIA STATE U	NAS 6-2602	Hale, L. C.	19	3113
WFC	Maurer, H. E.	PURDUE UNIVERSITY	NAS 6-2613	Phillips, T. L.	39	2045
WFC	Gray, J. W.	RICE UNIVERSITY	NAS 6-1667	Freeman, J. W.	11	3272

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
WFC	Vaughn, C. R.	STATE UNIV NY-BUFFAL	NGL 33-183-012	Williams, T. C.	51	2890
WFC	Stanley, H. R.	UNIV CALIF-L ANGELES	NAS 6-2463	Kaula, W. M.	33	1499
WFC	Stanley, R.	UNIV CALIF-SAN DIEGO	NAS 6-2506	Hendershott, M.	11	1559
WFC	Duke, J. R.	UNIV OF DAYTON	NAS 6-2456	Luers, J. K.	31	3043
WFC	Hoge, F. E.	UNIV MARYLAND-COL PK	NGR 21-002-435	Alley, C. O.	13	2265
WFC	Alfonsi, P. J.	UNIV MARYLAND-COL PK	NSG 6001	Harmon, D. M.	39	2282
WFC	Floyd, J. C.	UNIV MD-EASTRN SHORE	NAS 6-2595	Unavailable	99	2285
WFC	Raine, A. W.	UNIV MD-EASTRN SHORE	NGR 21-119-002	Nagarajon, N.	41	2287
WFC	Kim, H. H.	UNIV MD-EASTRN SHORE	NGR 21-119-003	Singh, G.	13	2288
WFC	Stanley, H. R.	UNIV TEXAS-AUSTIN	NAS 6-2454	Tapley, B. D.	32	3368
WFC	Schmidlin, F. J.	UNIV OF UTAH	NAS 6-1908	Staffanson, F. L.	31	3452
WFC	Duke, J. R.	UNIV OF UTAH	NAS 6-2498	Kao, S. K.	31	3453
WFC	Duke, J. R.	UNIV OF UTAH	NAS 6-2627	Staffanson, F. L.	31	3454
WFC	Bettle, J. F.	VIRGINIA POLY INST	NAS 6-1863	Pettry, D. E.	39	3595
WFC	Scott, J. H.	VIRGINIA POLY INST	NAS 6-2388	Pettry, D. E.	39	3596
WFC	West, W. H.	VIRGINIA POLY INST	NGL 47-004-067	Tieleman, H. W.	31	3598
WFC	McGoogan, J. T.	WOODSHOLE OCEAN INST	NAS 6-2585	Bowin, C.	32	2450
HQ-AC	Wright, M. D.	GEORGE WASHINGTON U	NSG 7145	Unavailable	75	1805
HQ-AC	Wright, M. D.	UNIV OF HOUSTON	NASW 2691	Unavailable	73	3349
HQ-AD	Emme, E. M.	JOHNS HOPKINS UNIV	NSR 21-001-077	Berthel, J. H.	73	2216
HQ-BX	Weir, J. F.	UNIV OF HAWAII	NASW 2742	Jefferies, J. T.	11	1944
HQ-D	Myers, B. C.	NORTHWESTERN UNIV	NGR 14-007-136	Radnor, M.	99	1969
HQ-EC	Freibaum, J.	MASS INST OF TECH	NASW 2787	Unavailable	45	2356
HQ-EP	Pinkler, D. G.	UNIV CALIF-BERKELEY	NGL 05-003-404	Colewell, R. N.	39	1439
HQ-ER	Jacobs, G. J.	BOSTON UNIVERSITY	NGR 22-004-024	MacKay, R. S.	51	2292
HQ-ES	Murphy, J. P.	OHIO STATE UNIV	NASW 2435	Mueller, I. I.	32	3008
HQ-ES	Murphy, J. P.	OHIO STATE UNIV	NGL 36-008-093	Mueller, I. I.	19	3010
HQ-ES	Murphy, J. P.	OHIO STATE UNIV	NGR 36-008-204	Mueller, I. I.	32	3015
HQ-ES	Murphy, J. P.	UNIV CALIF-L ANGELES	NSG 7002	Kaula, W. M.	32	1548
HQ-ET	Ermst, H. M.	CITY COLLEGE OF N Y	NSG 7144	Schilling, D. L.	75	2752
HQ-ET	Rosenberg, J. D.	GEORGE WASHINGTON U	NAS 5-20843	Marney, M. C.	73	1788
HQ-FE	Collin, E. E.	OKLAHOMA STATE UNIV	NASW 1964	Wiggins, K. E.	99	3059
HQ-FE	Tuttle, F. B.	UNIV OF UTAH	NASW 2648	Ridd, M. K.	39	3458
HQ-JG	Arnoldi, L. B.	BOSTON UNIVERSITY	NSG 7063	Hershberg, P. I.	52	2297
HQ-JG	Arnoldi, L. B.	UNIV MICH-ANN ARBOR	NGR 23-005-185	French, J. R., Jr.	53	2487
HQ-KT	Holley, H. L.	INDIANA U-BLOOMINGTN	NASW 2353	Shriner, H.	99	2028
HQ-KT	Holley, H. L.	INDIANA U-BLOOMINGTN	NASW 2467	Shriner, H.	99	2029
HQ-KT	Holley, H. L.	INDIANA U-BLOOMINGTN	NASW 2714	Shriner, H.	99	2030
HQ-KT	Holley, H. L.	SOUTHEASTN STATE COL	NASW 2379	Gold, C. H.	99	3060
HQ-KT	Holley, H. L.	SOUTHEASTN STATE COL	NASW 2512	Gold, H.	99	3061
HQ-KT	Holley, H. L.	SOUTHEASTN STATE COL	NASW 2629	Unavailable	99	3062
HQ-KT	Holley, H. L.	UNIV OF CONNECTICUT	NASW 2516	Wilde, D.	99	1745
HQ-KT	Ault, L. A.	UNIV OF DENVER	NASW 2607	Unavailable	75	1732
HQ-KT	Ault, L. A.	UNIV OF DENVER	NASW 2766	Freeman, J. E.	99	1733
HQ-KT	Holley, H. L.	UNIV OF GEORGIA	NASW 2401	Carmon, J. L.	99	1935
HQ-KT	Harrison, J. O.	UNIV OF GEORGIA	NASW 2658	Unavailable	99	1936
HQ-KT	Zimmerman, R.	UNIV OF MIAMI	NGR 10-007-113	Kline, J.	52	1870
HQ-KT	Holley, H. L.	UNIV OF NEW MEXICO	NASW 2399	Shinnick, W. A.	99	2716
HQ-KT	Bivins, R. G.	UNIV OF NEW MEXICO	NASW 2633	Unavailable	99	2717
HQ-KT	Holley, H. L.	UNIV OF PITTSBURGH	NASW 2425	Holley, E.	99	3151
HQ-KT	Holley, H. L.	UNIV OF PITTSBURGH	NASW 2674	Unavailable	99	3152
HQ-KT	Holley, H. L.	UNIV OF PITTSBURGH	NSR 39-011-064	Howie, E.	99	3167
HQ-KT	Holley, H. L.	UNIV OF SOUTHERN CAL	NASW 2592	Unavailable	99	1649
HQ-KT	Holley, H. L.	UNIV OF SOUTHERN CAL	NASW 2771	Unavailable	99	1650
HQ-KT	Zimmerman, R. R.	UNIV WISC-MADISON	NASW 2716	Unavailable	59	3685
HQ-P	Pohly, J. G.	ALABAMA A&M UNIV	NGR 01-001-003	Lee, C. O.	59	1000
HQ-P	Pohly, J. G.	ALABAMA A&M UNIV	NGR 01-001-013	Lowsine, L.	41	1001
HQ-P	Pohly, J. G.	ALABAMA A&M UNIV	NGR 01-001-021	Weathers, G. D.	46	1002

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HQ-P	Pohly, J. G.	ALABAMA A&M UNIV	NGR 01-001-024	Saha, H.	41	1004
HQ-P	Carter, C. H.	AUBURN UNIV-AUBURN	NGT 01-003-044	Vachon, R. I.	49	1028
HQ-P	Carter, C. H.	AUBURN UNIV-AUBURN	NGT 01-003-045	O'Brien, J. F.	49	1029
HQ-P	Pohly, J. G.	BENNETT COLLEGE-NC	NGT 34-017-001	Sayles, J. H.	99	2929
HQ-P	Pohly, J. G.	BOWIE STATE COLLEGE	NGT 21-027-009	Scurry, P. J.	21	2193
HQ-P	Pohly, J. G.	BOWIE STATE COLLEGE	NGT 21-027-012	Kirksey, C. H.	21	2194
HQ-P	Carter, C. H.	CASE WESTERN RESERVE	NGT 36-027-011	Prahl, J. M.	49	2985
HQ-P	Carter, C. H.	CATHOLIC UNIVERSITY	NGT 09-005-093	Fang, B. T.	49	1776
HQ-P	Redding, E. R.	COLLEGE OF WM & MARY	NGL 47-006-055	Sher, A.	99	3482
HQ-P	Vitale, J. A.	COLORADO SCH OF MINE	NGL 06-001-015	Lee, K.	39	1660
HQ-P	Morris, J. D.	COLUMBIA UNIVERSITY	NGR 33-008-168	Ginzberg, E.	72	2769
HQ-P	Vitale, J. A.	CORNELL UNIVERSITY	NGL 33-010-171	Liang, T.	39	2801
HQ-P	Pohly, J. G.	DELAWARE STATE COL	NGR 08-002-001	Helmy, E. M.	13	1759
HQ-P	Pohly, J. G.	DILLARD UNIVERSITY	NGR 19-015-001	Rogers, R.	39	2155
HQ-P	Pohly, J. G.	FEDERAL CITY COLLEGE	NGR 09-050-010	McDowell, H.	11	1782
HQ-P	Morris, J. D.	GEORGE WASHINGTON U	NGL 09-010-030	Mayo, A. L.	79	1791
HQ-P	Pohly, J. G.	GOUCHER COLLEGE	NGT 21-123-001	Billet, J.	99	2200
HQ-P	Pohly, J. G.	GRAMBLING STATE UNIV	NGR 19-011-009	Terrell, J.	13	2158
HQ-P	Pohly, J. G.	GRAMBLING STATE UNIV	NGR 19-011-012	Sabu, D. D.	43	2159
HQ-P	Pohly, J. G.	HAMPTON INSTITUTE	NGR 47-020-004	Handy, J. W.	69	3493
HQ-P	Pohly, J. G.	HAMPTON INSTITUTE	NGR 47-020-005	Hunter, C. E.	13	3494
HQ-P	Pohly, J. G.	HOWARD UNIVERSITY	NGL 09-011-046	Ferguson, G. A.	39	1810
HQ-P	Pohly, J. G.	HOWARD UNIVERSITY	NGR 09-011-052	Kumar, C. K.	11	1812
HQ-P	Carter, C. H.	HOWARD UNIVERSITY	NGT 09-011-051	Deloatch, E. M.	59	1817
HQ-P	Pohly, J. G.	HOWARD UNIVERSITY	NGT 09-011-058	Cox, E. L.	49	1818
HQ-P	Pohly, J. G.	JACKSON STATE UNIV	NGR 25-011-001	Nelson, F. R.	51	2555
HQ-P	Pohly, J. G.	LINCOLN UNIV-PA	NGT 39-108-750	Williams, W., Jr.	49	3108
HQ-P	Redding, E. R.	LA STATE U-BAT ROUGE	NGL 19-001-097	Whitehurst, C. A.	39	2166
HQ-P	Vitale, J. A.	LA STATE U-BAT ROUGE	NGL 19-001-105	Whitehurst, C. A.	39	2167
HQ-P	Redding, E. R.	MASS INST OF TECH	NGL 22-009-019	Harrington, J. V.	99	2361
HQ-P	Redding, E. R.	MASS INST OF TECH	NGL 22-009-638	McCarthy, J. F., Jr.	99	2370
HQ-P	Vitale, J. A.	MICHIGAN STATE UNIV	NGL 23-004-083	Boylan, M. G.	39	2456
HQ-P	Redding, E. R.	MISSISSIPPI STATE U	NGL 25-001-040	Brown, L. R.	39	2570
HQ-P	Vitale, J. A.	MISSISSIPPI STATE U	NGL 25-001-054	Bouchillon, C. W.	39	2571
HQ-P	Pohly, J. G.	MOREHOUSE COLLEGE	NGR 11-008-002	Spight, C.	13	1925
HQ-P	Pohly, J. G.	MOREHOUSE COLLEGE	NGT 11-008-004	Gayles, J. N.	99	1926
HQ-P	Pohly, J. G.	MORGAN STATE COLLEGE	NGT 21-025-006	Proctor, N. K.	19	2218
HQ-P	Pohly, J. G.	NM HIGHLANDS UNIV	NGT 32-010-001	Zenick, H.	99	2693
HQ-P	Pohly, J. G.	NEW MEX ST U-LAS CR	NGT 32-003-750	Zimmerman, R. M.	49	2711
HQ-P	Pohly, J. G.	NO CAR A&T STATE U	NGR 34-012-003	Madan, R. N.	45	2939
HQ-P	Pohly, J. G.	NO CAR A&T STATE U	NGT 34-012-750	Chandra, S.	49	2942
HQ-P	Carter, C. H.	NO CAROLINA STATE U	NGT 34-002-097	Hart, F. D.	49	2956
HQ-P	Morris, J. D.	NORTHWESTERN UNIV	NGL 14-007-058	Radnor, M.	79	1962
HQ-P	Morris, J. D.	NORTHWESTERN UNIV	NGL 14-007-062	Rubenstein, A. H.	99	1963
HQ-P	Vitale, J. A.	OLD DOMINION UNIV	NGL 47-003-067	Kindle, E. C.	31	3513
HQ-P	Carter, C. H.	OLD DOMINION UNIV	NGT 47-003-028	Goglia, G. L.	49	3523
HQ-P	Carter, C. H.	OLD DOMINION UNIV	NGT 47-003-029	Goglia, G. L.	49	3524
HQ-P	Vitale, J. A.	OREGON STATE UNIV	NGL 38-002-053	Schrumpf, B. J.	39	3077
HQ-P	Pohly, J. G.	PAN AMERICAN UNIV	NGR 44-087-001	Le Master, E. W.	39	3262
HQ-P	Carter, C. H.	PENNSYLVANIA STATE U	NGT 39-009-141	Reethof, G.	99	3133
HQ-P	Pohly, J. G.	PRAIRIE VIEW A&M U	NGR 44-033-014	Stubblefield, C. T.	43	3265
HQ-P	Pohly, J. G.	PRAIRIE VIEW A&M U	NGT 44-033-750	Greaux, A. E.	49	3266
HQ-P	Vitale, J. A.	PURDUE UNIVERSITY	NGL 15-005-186	Weismiller, R. A.	39	2053
HQ-P	Vitale, J. A.	SO DAKOTA STATE UNIV	NGL 42-003-007	Myers, V. I.	39	3196
HQ-P	Pohly, J. G.	SOUTHEASTN STATE COL	NGT 37-004-010	Robinson, J. L.	99	3063
HQ-P	Pohly, J. G.	SO UNIV-BATON ROUGE	NGT 19-005-750	Burrell, M. Q.	49	2172
HQ-P	Pohly, J. G.	SO UNIV-NEW ORLEANS	NGR 19-014-001	Lucas, E. C.	39	2178
HQ-P	Pohly, J. G.	SPELMAN COLLEGE	NGT 11-013-001	McBay, S. M.	99	1933

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HQ-P	Carter, C. H.	STANFORD UNIVERSITY	NGT 05-020-409	Adams, J. L.	49	1384
HQ-P	Carter, C. H.	STANFORD UNIVERSITY	NGT 05-020-412	Bershader, D.	49	1385
HQ-P	Pohly, J. G.	TENNESSEE STATE UNIV	NGT 43-014-750	Clark, Y. Y.	49	3204
HQ-P	Pohly, J. G.	TEXAS A&I UNIVERSITY	NGT 44-073-750	Franke, E. A.	49	3294
HQ-P	Vitale, J. A.	TEXAS A&M UNIVERSITY	NGL 44-001-001	Rouse, J. W., Jr.	39	3321
HQ-P	Pohly, J. G.	TUSKEGEE INSTITUTE	NGT 01-005-750	Dybczak, Z. W.	49	1037
HQ-P	Redding, E. R.	UNIV ALA-HUNTSVILLE	NGL 01-008-001	Rush, J. E.	99	1070
HQ-P	Carter, C. H.	UNIV ALA-TUSCALOOSA	NGT 01-002-080	Barfield, B. F.	49	1084
HQ-P	Vitale, J. A.	UNIV ALASKA-FAIRBNKS	NGL 02-001-092	Miller, J. M.	39	1092
HQ-P	Vitale, J. A.	UNIV OF ARIZONA	NGL 03-002-313	Beckel, C. L.	39	1140
HQ-P	Redding, E. R.	UNIV CALIF-BERKELEY	NGL 05-003-497	Anderson, K. A.	99	1442
HQ-P	Redding, E. R.	UNIV CALIF-L ANGELES	NGL 05-007-003	Libby, W. F.	99	1512
HQ-P	Redding, E. R.	UNIV OF CHICAGO	NGL 14-001-258	Simpson, J. A.	99	1989
HQ-P	Vitale, J. A.	UNIV COLORADO-BOLDR	NGL 06-003-200	Ives, J. D.	39	1706
HQ-P	Redding, E. R.	UNIV OF HOUSTON	NGL 44-005-084	Huang, C. J.	21	3353
HQ-P	Carter, C. H.	UNIV OF HOUSTON	NGT 44-005-114	Huang, C. J.	49	3362
HQ-P	Carter, C. H.	UNIV OF HOUSTON	NGT 44-005-115	Huang, C. J.	49	3363
HQ-P	Vitale, J. A.	UNIV OF KANSAS	NGL 17-004-024	Barr, B. G.	39	2121
HQ-P	Carter, C. H.	UNIV MARYLAND-COL PK	NGT 21-002-254	Emad, F. P.	49	2267
HQ-P	Vitale, J. A.	U MINN-MNPLS-ST PAUL	NGL 24-005-263	Cahill, L. J., Jr.	39	2537
HQ-P	Carter, C. H.	U MINN-MNPLS-ST PAUL	NGT 24-005-078	Anderson, G. W.	99	2546
HQ-P	Vitale, J. A.	UNIV NEBRASKA-LINCLN	NGL 28-004-020	Drew, J. V.	39	2617
HQ-P	Morris, J. D.	UNIV OF NEW MEXICO	NGL 32-004-042	Rosenthal, A. H.	75	2726
HQ-P	Pohly, J. G.	UNIV OF NEW MEXICO	NGT 32-004-750	Theye, L. A.	49	2733
HQ-P	Redding, E. R.	UNIV TEXAS-DALLAS	NGL 44-004-130	Johnson, F. S.	99	3416
HQ-P	Pohly, J. G.	UNIV TEXAS-EL PASO	NGT 44-085-750	Guard, R. W.	49	3430
HQ-P	Vitale, J. A.	UNIV TEX-PUB HEALTH	NGL 44-084-003	Rush, M.	59	3441
HQ-P	Redding, E. R.	UNIV WISC-MADISON	NGL 50-002-001	Bock, R. M.	12	3686
HQ-P	Vitale, J. A.	UNIV WISC-MADISON	NGL 50-002-114	Suomi, V. E.	39	3689
HQ-P	Vitale, J. A.	UNIV WISC-MADISON	NGL 50-002-127	Clapp, J. L.	39	3690
HQ-P	Redding, E. R.	WASHINGTON UNIVERSTY	NGL 26-008-054	Morgan, R. P.	99	2601
HQ-P	Pohly, J. G.	XAVIER UNIV-LA	NGR 19-007-002	Fulwiler, J. H.	76	2188
HQ-MM	Larson, C. A.	BOSTON UNIVERSITY	NGR 22-004-018	Fulton, G. P.	59	2290
HQ-MM	Saunders, J. F.	CATHOLIC UNIVERSITY	NGR 09-005-022	Decicco, B. T.	51	1770
HQ-MM	Jones, W. L.	COLLEGE OF WM & MARY	NSG 7073	Aceto, H., Jr.	59	3491
HQ-MM	Vinograd, S. P.	INDIANA U-BLOOMINGTN	NGL 15-003-117	Maickel, R. P.	52	2034
HQ-MM	Brownstein, H. S.	OHIO STATE UNIV	NGT 36-008-007	Ellingson, H. V.	52	3018
HQ-MM	Brownstein, H. S.	OHIO STATE UNIV	NSR 36-008-108	Ellingson, H. V.	59	3022
HQ-MM	Jones, W. L.	UNIV ILLINOIS-URBANA	NGL 14-005-074	Ades, H. W.	52	2006
HQ-MM	Halstead, T. W.	UNIV OF TORONTO	NSG 7079	Johnson, W. H.	53	3721
HQ-MM	Saunders, J. F.	VIRGINIA COMNWLTH U	NGL 47-002-005	Ham, W. T.	51	3586
HQ-MT	Huff, V. N.	HOWARD UNIVERSITY	NGR 09-011-053	Bainum, P. M.	46	1813
HQ-MT	Hall, H.	MASS INST OF TECH	NGR 22-009-735	Chapman, P. K.	13	2395
HQ-MT	Cramblitt, D.	PENNSYLVANIA STATE U	NSG 7078	Kaplan, M.	42	3140
HQ-MT	Hartman, O. B.	RICE UNIVERSITY	NASW 2776	Trotti, G.	49	3278
HQ-MT	Redfield, M.	UNIV MARYLAND-COL PK	NGR 21-002-285	Alley, C. O.	13	2244
HQ-RA	Gessow, A.	UNIV MARYLAND-COL PK	NGR 21-002-303	Melnik, W. L.	13	2248
HQ-RE	Pontious, C. E.	CALIF INST OF TECH	NGR 05-002-340	Ingargiola, G.	49	1229
HQ-RE	Catoe, C. E.	MASS INST OF TECH	NGL 22-009-013	Kennedy, R. S.	45	2358
HQ-RE	Janow, C.	PENNSYLVANIA STATE U	NGL 39-009-023	Shearer, J. L.	49	3122
HQ-RE	Catoe, C. E.	STANFORD UNIVERSITY	NGL 05-020-103	Harris, S. E.	45	1347
HQ-RE	Pontious, C. E.	UNIV MARYLAND-COL PK	NGR 21-002-270	Minker, J.	21	2243
HQ-RO	Enders, J. H.	MASS INST OF TECH	NASW 2412	Simpon, R.	99	2355
HQ-RP	Lazar, J.	PRINCETON UNIVERSITY	NGL 31-001-005	Jahn, R. G.	42	2656
HQ-RP	Cohn, E. M.	UNIV OF PENNSYLVANIA	NGL 39-010-001	Unavailable	13	3144
HQ-RR	Lundholm, J. G.	ARIZONA STATE UNIV	NSG 7019	Parsons, S. B.	13	1099
HQ-RR	Thom, K.	GEORGIA INST OF TECH	NSG 7067	Williams, R.	13	1921
HQ-RR	Thom, K.	ILL INST OF TECH	NSG 7039	Weinstein, H.	13	1958

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-RR	Thom, K.	NO CAROLINA STATE U	NGR 34-002-177	Hassan, H. A.	13	2952
HQ-RR	Thom, K.	PRINCETON UNIVERSITY	NGR 31-001-328	Layton, J. P.	13	2676
HQ-RR	Thom, K.	STANFORD UNIVERSITY	NSG 7042	Pantell, R. H.	13	1402
HQ-RR	Thom, K.	STANFORD UNIVERSITY	NSG 7110	Unavailable	13	1405
HQ-RR	Lundholm, J. G.	STATE UNIV NY-BUFFAL	NSG 7071	Shaw, D. T.	13	2894
HQ-RR	Thom, K.	UNIV OF FLORIDA	NGL 10-005-089	Schneider, R. T.	13	1852
HQ-RR	Thom, K.	UNIV MARYLAND-COL PK	NGR 21-002-408	Tidman, D. A.	21	2261
HQ-RR	Thom, K.	UNIV OF WASHINGTON	NGL 48-002-044	Hertzberg, A.	13	3641
HQ-RW	Gangler, J. J.	ALFRED UNIVERSITY	NASW 2504	Frechette, V. D.	47	2737
HQ-RW	Maltz, J.	CASE WESTERN RESERVE	NSG 7035	Manson, S. S.	47	2993
HQ-RW	Maltz, J.	GEORGE WASHINGTON U	NASW 2587	Unavailable	49	1789
HQ-RW	Gilstad, D. A.	PURDUE UNIVERSITY	NSR 15-005-037	Dewitt, D. P.	47	2065
HQ-RW	Weinberg, I.	STANFORD UNIVERSITY	NGL 05-020-242	Little, W. A.	13	1351
HQ-RW	Weinberg, I.	TULANE UNIVERSITY	NGL 19-002-027	Hermann, A. M.	13	2182
HQ-RX	Mullin, J. S.	PRINCETON UNIVERSITY	NSG 7131	Graham, D.	99	2687
HQ-RX	Rollins, R. H.	W VA COL GRAD STUDY	NSG 7089	Cobb, W. E.	75	3658
HQ-NS	Thom, K.	CITY COLLEGE OF N Y	NGL 33-013-034	Tchen, C. M.	13	2746
HQ-NS	Miller, D. J.	MASS INST OF TECH	NGR 22-009-658	Sheridan, T. B.	46	2386
HQ-NS	Thom, K.	NO CAROLINA STATE U	NGL 34-002-017	Bennett, W. H.	13	2946
HQ-NS	Schwenk, F. C.	UNIV OF ARIZONA	NGL 03-002-006	Schultz, D. G.	45	1133
HQ-NS	Thom, K.	UNIV ILLINOIS-URBANA	NGR 14-005-183	Miley, G. H.	12	2013
HQ-SG	Bogges, N. W.	BOWLING GRN STATE U	NSG 7022	Ptak, R. L.	11	2972
HQ-SG	Jordan, S. D.	BRANDEIS UNIVERSITY	NSG 7098	Stein, R. F.	11	2298
HQ-SG	Berko, F. W.	BRIGHAM YOUNG UNIV	NGR 45-001-011	Jones, D. E.	39	3445
HQ-SG	Brunk, W. E.	CALIF INST OF TECH	NGL 05-002-007	Neugebauer, G.	11	1197
HQ-SG	Weldon, J. M.	CALIF INST OF TECH	NGL 05-002-034	Zirin, H.	11	1198
HQ-SG	Rosendhal, J. D.	CALIF INST OF TECH	NGL 05-002-134	Oke, J. B.	11	1201
HQ-SG	Bogges, N. W.	CALIF INST OF TECH	NGL 05-002-207	Ladle, G. H.	11	1207
HQ-SG	Weldon, J. M.	CALIF INST OF TECH	NGR 05-002-142	Leighton, R. B.	11	1213
HQ-SG	Opp, A. G.	CALIF INST OF TECH	NGR 05-002-160	Vogt, R. E.	11	1214
HQ-SG	Bogges, N. W.	CALIF INST OF TECH	NGR 05-002-256	Thorne, K. S.	11	1216
HQ-SG	Opp, A. G.	CALIF INST OF TECH	NGR 05-002-284	Garmire, G. P.	11	1218
HQ-SG	Hallenbeck, D. R.	CALIF INST OF TECH	NGR 05-002-294	Zirin, H.	11	1219
HQ-SG	Hallenbeck, D. R.	CALIF INST OF TECH	NGR 05-002-296	Garmire, G. P.	11	1220
HQ-SG	Timothy, A. F.	CALIF INST OF TECH	NGR 05-002-345	Zirin, H.	13	1230
HQ-SG	Bogges, N. W.	CALIF INST OF TECH	NSG 7140	Neugebauer, G.	11	1240
HQ-SG	Chase, R. H.	CALIF INST OF TECH	NSR 05-002-071	Zirin, H.	11	1242
HQ-SG	Dubin, M.	CAL STATE U-FULLERTN	NGR 05-071-002	Johnson, F. M.	11	1250
HQ-SG	Berko, F. W.	CATHOLIC UNIVERSITY	NGR 09-005-063	Whang, Y. C.	13	1771
HQ-SG	Lazarus, A. J.	COLUMBIA UNIVERSITY	NGR 33-008-102	Novick, R.	11	2767
HQ-SG	Calahan, H. D.	COLUMBIA UNIVERSITY	NGR 33-008-183	Wolff, R. S.	11	2772
HQ-SG	Oertel, G. K.	COLUMBIA UNIVERSITY	NGR 33-008-189	Wolff, R. S.	11	2773
HQ-SG	Roman, N. G.	COLUMBIA UNIVERSITY	NGR 33-008-194	Weisskopf, M. C.	11	2775
HQ-SG	Oertel, G. K.	COLUMBIA UNIVERSITY	NGR 33-008-200	Novick, R.	11	2777
HQ-SG	Weldon, J. M.	COLUMBIA UNIVERSITY	NSG 7075	Novick, R.	11	2782
HQ-SG	Bogges, N. W.	COLUMBIA UNIVERSITY	NSG 7105	Zare, R. N.	11	2783
HQ-SG	Opp, A. G.	CORNELL UNIVERSITY	NGR 33-010-145	Greisen, K. I.	11	2808
HQ-SG	Bogges, N. W.	CORNELL UNIVERSITY	NGR 33-010-172	Harwit, M. O.	11	2811
HQ-SG	Berko, F. W.	CORNELL UNIVERSITY	NSG 7104	Walker, J. C.	13	2824
HQ-SG	Berko, F. W.	CORNELL UNIVERSITY	NSG 7135	Auer, P. L.	13	2826
HQ-SG	Berko, F. W.	DARTMOUTH COLLEGE	NGR 30-001-040	Sonnerup, B. U.	13	2627
HQ-SG	Berko, F. W.	DARTMOUTH COLLEGE	NGR 30-001-041	Laaspere, T.	13	2628
HQ-SG	Berko, F. W.	DARTMOUTH COLLEGE	NSG 7097	Unavailable	11	2630
HQ-SG	Berko, F. W.	GRAMBLING STATE UNIV	NGR 19-011-007	Cummings, W. D.	13	2157
HQ-SG	Jordan, S. D.	HARVARD UNIVERSITY	NGL 22-007-006	Parkinson, W. H.	13	2307
HQ-SG	Weldon, J. M.	HARVARD UNIVERSITY	NGR 22-007-202	Goldberg, L.	11	2313
HQ-SG	Weldon, J. M.	HARVARD UNIVERSITY	NGR 22-007-257	Maxwell, A.	11	2316
HQ-SG	Bogges, N. W.	HARVARD UNIVERSITY	NGR 22-007-270	Fazio, G. G.	11	2319

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HQ-SG	Lazarus, A. J.	HARVARD UNIVERSITY	NGR 22-007-272	Cameron, A. G.	11	2320
HQ-SG	Weldon, J. M.	HARVARD UNIVERSITY	NSG 7009	Parkinson, W. H.	11	2325
HQ-SG	Timothy, A. F.	HARVARD UNIVERSITY	NSG 7018	Noyes, R. W.	11	2326
HQ-SG	Bogges, N. W.	INDIANA U-BLOOMINGTN	NGL 15-003-002	Johnson, H. R.	11	2032
HQ-SG	Roman, N. G.	JOHNS HOPKINS UNIV	NGR 21-001-001	Fastie, W. G.	11	2206
HQ-SG	Kavanagh, L. D., Jr.	JOHNS HOPKINS UNIV	NGR 21-001-119	Krimigis, S. M.	32	2209
HQ-SG	Berko, F. W.	JOHNS HOPKINS UNIV	NSG 7055	Krimigis, S. M.	13	2214
HQ-SG	Opp, A. G.	LA STATE U-BAT ROUGE	NGR 19-001-012	Huggett, R. W.	11	2168
HQ-SG	Schmerling, E. R.	MASS INST OF TECH	NGL 22-009-015	Bridge, H. S.	13	2359
HQ-SG	Roman, N. G.	MASS INST OF TECH	NGR 22-009-366	Shapiro, I. I.	31	2376
HQ-SG	Bogges, N. W.	MASS INST OF TECH	NGR 22-009-526	Weiss, R.	11	2380
HQ-SG	Dubin, M.	MASS INST OF TECH	NGR 22-009-583	McCord, T. B.	11	2383
HQ-SG	Opp, A. G.	MASS INST OF TECH	NGR 22-009-730	Bradt, H. V.	11	2393
HQ-SG	Opp, A. G.	MASS INST OF TECH	NGR 22-009-785	Clark, G. W.	13	2400
HQ-SG	Berko, F. W.	MASS INST OF TECH	NGR 22-009-786	Bridge, H. S.	13	2401
HQ-SG	Roman, N. G.	MASS INST OF TECH	NSG 7091	Weiss, R.	11	2431
HQ-SG	Roman, N. G.	MASS INST OF TECH	NSR 22-009-423	Clark, G. W.	19	2434
HQ-SG	Roman, N. G.	MONTANA STATE UNIV	NGR 27-001-040	Nordtvedt, K., Jr.	11	2611
HQ-SG	Roman, N. G.	NEW MEX ST U-LAS CR	NGL 32-003-069	Liefeld, R. J.	11	2708
HQ-SG	Rosendahl, J. D.	NEW YORK UNIVERSITY	NGR 33-016-196	Glassgold, A. E.	13	2843
HQ-SG	Lazarus, A. J.	NEW YORK UNIVERSITY	NSG 7116	Korff, S. A.	11	2852
HQ-SG	Dubin, M.	NO CAROLINA STATE U	NGR 34-002-196	Manring, E. R.	11	2955
HQ-SG	Rosendahl, J. D.	NORTHWESTERN UNIV	NGL 14-007-041	Huang, S. S.	11	1961
HQ-SG	Sobieski, S.	NORTHWESTERN UNIV	NGR 14-007-122	Bahng, J. D.	11	1967
HQ-SG	Schmerling, E. R.	PENNSYLVANIA STATE U	NGL 39-009-002	Ross, W. J.	13	3118
HQ-SG	Berko, F. W.	PENNSYLVANIA STATE U	NGL 39-009-003	Nisbet, J. S.	13	3119
HQ-SG	Berko, F. W.	PENNSYLVANIA STATE U	NGL 39-009-032	Kendall, B. R.	13	3123
HQ-SG	Berko, F. W.	PENNSYLVANIA STATE U	NGR 39-009-218	Hale, L. C.	13	3130
HQ-SG	Cauffman, D. P.	POLY INST OF NY	NGR 33-006-047	Gross, S. H.	13	2855
HQ-SG	Roman, N. G.	PRINCETON UNIVERSITY	NGL 31-001-007	Spitzer, L., Jr.	11	2657
HQ-SG	Roman, N. G.	PRINCETON UNIVERSITY	NGR 31-001-001	Millich, F.	11	2662
HQ-SG	Weldon, J. M.	PRINCETON UNIVERSITY	NSG 7088	Schwartzchild, M.	11	2686
HQ-SG	Sures, A. H.	PRINCETON UNIVERSITY	NSR 31-001-259	Morton, D. C.	11	2688
HQ-SG	Roman, N. G.	PRINCETON UNIVERSITY	NSR 31-001-901	Lowrance, J. L.	11	2691
HQ-SG	Roman, N. G.	PURDUE UNIVERSITY	NGL 15-005-003	Andrew, K. L.	11	2050
HQ-SG	Berko, F. W.	RICE UNIVERSITY	NGL 44-006-012	Michel, F. C.	13	3280
HQ-SG	Berko, F. W.	RICE UNIVERSITY	NGR 44-006-137	Dessler, A. J.	13	3282
HQ-SG	Lazarus, A. J.	RICE UNIVERSITY	NSG 7015	Clayton, D. D.	11	3286
HQ-SG	Dubin, M.	RUTGERS UNIV-NEWARK	NGR 31-004-049	Carroll, B.	13	2692
HQ-SG	Oertel, G. K.	SACRAMENTO CITY COL	NGR 05-084-002	Vorpahl, J. A.	11	1268
HQ-SG	Berko, F. W.	STANFORD UNIVERSITY	NGL 05-020-008	Helliwell, R. A.	13	1345
HQ-SG	Berko, F. W.	STANFORD UNIVERSITY	NGL 05-020-176	Crawford, F. W.	13	1349
HQ-SG	Timothy, A. F.	STANFORD UNIVERSITY	NGL 05-020-272	Sturrock, P. A.	13	1353
HQ-SG	Berko, F. W.	STANFORD UNIVERSITY	NGR 05-020-001	Da Rosa, A. V.	13	1358
HQ-SG	Berko, F. W.	STANFORD UNIVERSITY	NGR 05-020-407	Croft, T. A.	19	1363
HQ-SG	Opp, A. G.	STANFORD UNIVERSITY	NGR 05-020-452	Hofstadter, R.	11	1365
HQ-SG	Bogges, N. W.	STANFORD UNIVERSITY	NGR 05-020-510	Petrosian, V.	11	1367
HQ-SG	Weldon, J. M.	STANFORD UNIVERSITY	NGR 05-020-559	Wilcox, J. M.	11	1369
HQ-SG	Lazarus, A. J.	STANFORD UNIVERSITY	NGR 05-020-668	Sturrock, P. A.	11	1377
HQ-SG	Weldon, J. M.	STANFORD UNIVERSITY	NGR 05-020-695	Walker, A. B.	11	1381
HQ-SG	Jordan, S. D.	STANFORD UNIVERSITY	NSG 7092	Sturrock, P. A.	11	1403
HQ-SG	Jordan, S. D.	STANFORD UNIVERSITY	NSG 7099	Walker, A. B.	11	1404
HQ-SG	Dubin, M.	STATE UNIV NY-ALBANY	NSG 7093	Weinberg, J. L.	31	2885
HQ-SG	Rosendahl, J. D.	ST U NY COL-GENESE	NGR 33-219-002	Meisel, D. D.	11	2918
HQ-SG	Weldon, J. M.	STATE U NY-STONY BRK	NGR 33-015-068	Stroke, G. W.	13	2899
HQ-SG	Lazarus, A. J.	STATE U NY-STONY BRK	NGR 33-015-180	Forman, M. A.	11	2907
HQ-SG	Weldon, J. M.	STATE U NY-STONY BRK	NSG 7003	Stroke, G. W.	11	2912
HQ-SG	Jordan, S. D.	UNIV ALA-HUNTSVILLE	NGR 01-008-015	Rao, G. L.	11	1071

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HQ-SG	Berko, F. W.	UNIV ALASKA-FAIRBNKS	NGR 02-001-087	Davis, T. N.	13	1093
HQ-SG	Berko, F. W.	UNIV ALASKA-FAIRBNKS	NSG 7051	Akasofu, S. I.	13	1096
HQ-SG	Aucremanne, M. J.	UNIV OF ARIZONA	NASW 2283	Meinel, A. B.	42	1121
HQ-SG	Roman, N. G.	UNIV OF ARIZONA	NGL 03-002-017	Bashkin, S.	11	1134
HQ-SG	Roman, N. G.	UNIV OF ARIZONA	NGL 03-002-032	Tiftt, W. G.	11	1136
HQ-SG	Dubin, M.	UNIV OF ARIZONA	NGL 03-002-081	Gehrels, A. M.	11	1137
HQ-SG	Opp, A. G.	UNIV OF ARIZONA	NGR 03-002-071	Bowen, T.	11	1141
HQ-SG	Berko, F. W.	UNIV OF ARIZONA	NGR 03-002-107	Fan, C. Y.	13	1142
HQ-SG	Roman, N. G.	UNIV OF ARIZONA	NGR 03-002-269	Low, F. J.	11	1146
HQ-SG	Sobieski, S.	UNIV OF ARIZONA	NGR 03-002-309	Weymann, R. J.	11	1147
HQ-SG	Bogges, N. W.	UNIV OF ARIZONA	NGR 03-002-371	Hoffman, W. F.	11	1152
HQ-SG	Berko, F. W.	UNIV OF ARIZONA	NSG 7024	Sonett, C. P.	13	1168
HQ-SG	Opp, A. G.	UNIV OF ARIZONA	NSG 7101	Jokippi, J.	11	1171
HQ-SG	Rosendhal, J. D.	UNIV ARKANSAS-FAYETV	NSG 7106	Hughes, R. H.	11	1178
HQ-SG	Berko, F. W.	UNIV CALIF-BERKELEY	NGL 05-003-017	Anderson, K. A.	19	1435
HQ-SG	Bogges, N. W.	UNIV CALIF-BERKELEY	NGL 05-003-272	Townes, C. H.	11	1437
HQ-SG	Berko, F. W.	UNIV CALIF-BERKELEY	NGR 05-003-239	Mozer, F. S.	13	1443
HQ-SG	Dubin, M.	UNIV CALIF-BERKELEY	NGR 05-003-309	Cunningham, L. E.	31	1444
HQ-SG	Lazarus, A. J.	UNIV CALIF-BERKELEY	NGR 05-003-376	Price, P. B.	11	1445
HQ-SG	Lazarus, A. J.	UNIV CALIF-BERKELEY	NGR 05-003-450	Bowyer, C. S.	11	1449
HQ-SG	Kavanagh, L. D., Jr.	UNIV CALIF-BERKELEY	NGR 05-003-480	Mozer, F. S.	13	1455
HQ-SG	Oertel, G. K.	UNIV CALIF-BERKELEY	NGR 05-003-510	Anderson, K. A.	11	1456
HQ-SG	Lazarus, A. J.	UNIV CALIF-BERKELEY	NGR 05-003-513	Heckman, H. H.	11	1458
HQ-SG	Lazarus, A. J.	UNIV CALIF-BERKELEY	NGR 05-003-553	Alvarez, L. W.	11	1459
HQ-SG	Rosendhal, J. D.	UNIV CALIF-BERKELEY	NGR 05-003-578	Silk, J. I.	11	1462
HQ-SG	Rosendhal, J. D.	UNIV CALIF-BERKELEY	NSG 7139	Bowyer, C. S.	11	1472
HQ-SG	Mead, G.	UNIV CALIF-DAVIS	NGR 05-004-006	McIlwain, C. E.	32	1484
HQ-SG	Berko, F. W.	UNIV CALIF-L ANGELES	NGL 05-007-004	Coleman, P. J., Jr.	39	1513
HQ-SG	Dubin, M.	UNIV CALIF-L ANGELES	NGL 05-007-005	Wetherill, G. W.	11	1514
HQ-SG	Weldon, J. M.	UNIV CALIF-L ANGELES	NGL 05-007-046	Alley, L. H.	11	1516
HQ-SG	Berko, F. W.	UNIV CALIF-L ANGELES	NGL 05-007-190	Kennel, C. F.	19	1517
HQ-SG	Berko, F. W.	UNIV CALIF-L ANGELES	NGR 05-007-276	Holzer, R. E.	13	1525
HQ-SG	Berko, F. W.	UNIV CALIF-L ANGELES	NSG 7008	Russell, C. T.	13	1549
HQ-SG	Opp, A. G.	UNIV CALIF-RIVERSIDE	NGR 05-008-022	White, R. S.	11	1553
HQ-SG	Opp, A. G.	UNIV CALIF-SAN DIEGO	NGL 05-005-003	Peterson, L. E.	13	1562
HQ-SG	Roman, N. G.	UNIV CALIF-SAN DIEGO	NGL 05-005-004	Gould, R. J.	11	1563
HQ-SG	Berko, F. W.	UNIV CALIF-SAN DIEGO	NGL 05-005-007	McIlwain, C. E.	13	1564
HQ-SG	Berko, F. W.	UNIV CALIF-SAN DIEGO	NGR 05-009-075	Banks, P. M.	13	1575
HQ-SG	Berko, F. W.	UNIV CALIF-SAN DIEGO	NGR 05-009-076	Fejer, J. A.	13	1576
HQ-SG	Schmerling, E. R.	UNIV CALIF-SAN DIEGO	NGR 05-009-081	Axford, W. I.	13	1577
HQ-SG	Dwornik, S. E.	UNIV CALIF-SAN DIEGO	NGR 05-009-110	Alfven, H.	11	1579
HQ-SG	Aucremanne, M. J.	UNIV CALIF-SAN DIEGO	NGR 05-009-188	McIlwain, C. E.	11	1581
HQ-SG	Jordan, S. D.	UNIV CALIF-SAN DIEGO	NGR 05-009-226	Penner, S. S.	11	1586
HQ-SG	Schmerling, E. R.	UNIV CALIF-SAN DIEGO	NGR 05-009-256	Banks, P. M.	19	1589
HQ-SG	Schmerling, E. R.	UNIV CALIF-SAN DIEGO	NSG 7001	Doupnik, J. R.	31	1596
HQ-SG	Jordan, S. D.	UNIV CALIF-SAN DIEGO	NSG 7100	Hudson, H. S.	13	1598
HQ-SG	Bogges, N. W.	UNIV CALIF-S CRUZ	NGR 05-061-015	Rank, D. M.	11	1612
HQ-SG	Lazarus, A. J.	UNIV OF CHICAGO	NGL 14-001-001	Parker, E. N.	11	1981
HQ-SG	Lazarus, A. J.	UNIV OF CHICAGO	NGL 14-001-005	Meyer, P.	11	1982
HQ-SG	Lazarus, A. J.	UNIV OF CHICAGO	NGL 14-001-006	Simpson, J. A.	11	1983
HQ-SG	Dubin, M.	UNIV OF CHICAGO	NGL 14-001-060	Adams, T.	11	1985
HQ-SG	Rosendhal, J. D.	UNIV OF CHICAGO	NGR 14-001-147	Hobbs, L. M.	11	1992
HQ-SG	Weldon, J. M.	UNIV OF CHICAGO	NGR 14-001-164	Blake, R. L.	11	1993
HQ-SG	Jordan, S. D.	UNIV COLORADO-BOLDR	NASR 86	Reethof, G.	13	1702
HQ-SG	Jordan, S. D.	UNIV COLORADO-BOLDR	NGL 06-003-057	Linsky, J. L.	13	1704
HQ-SG	Dubin, M.	UNIV COLORADO-BOLDR	NGL 06-003-064	Barth, C. A.	31	1705
HQ-SG	Weldon, J. M.	UNIV COLORADO-BOLDR	NGR 06-003-069	Bruner, E. C.	11	1707
HQ-SG	Roman, N. G.	UNIV COLORADO-BOLDR	NGR 06-003-176	Lillie, C. F.	11	1709

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-SG	Roman, N. G.	UNIV COLORADO-BOLDR	NGR 06-003-179	Lillie, C. F.	11	1710
HQ-SG	Calahan, H. D.	UNIV COLORADO-BOLDR	NGR 06-003-215	Speiser, T. W.	13	1716
HQ-SG	Calahan, H. D.	UNIV COLORADO-BOLDR	NGR 06-003-216	Linsky, J. L.	11	1717
HQ-SG	Dubin, M.	UNIV COLORADO-BOLDR	NGR 06-003-222	Lillie, C. F.	11	1719
HQ-SG	Opp, A. G.	UNIV COLORADO-BOLDR	NSG 7128	McCray, R.	11	1727
HQ-SG	Jordan, S. D.	UNIV COLORADO-BOLDR	NSG 7130	Bruner, E. C.	13	1728
HQ-SG	Berko, F. W.	UNIV OF DENVER	NGR 06-004-058	Patel, V. L.	13	1734
HQ-SG	Berko, F. W.	UNIV OF DENVER	NGR 06-004-060	Roederer, J. G.	13	1735
HQ-SG	Calahan, H. D.	UNIV OF DENVER	NGR 06-004-123	Patel, V. L.	13	1736
HQ-SG	Hallenbeck, D. R.	UNIV OF FLORIDA	NGR 10-005-176	Carr, T. D.	11	1856
HQ-SG	Jordan, S. D.	UNIV OF HAWAII	NASR 5	McAllister, H. C.	13	1942
HQ-SG	Weldon, J. M.	UNIV OF HAWAII	NGL 12-001-011	Jefferies, J. T.	11	1945
HQ-SG	Timothy, A. F.	UNIV OF HAWAII	NGR 12-001-075	Jefferies, J. T.	11	1948
HQ-SG	Berko, F. W.	UNIV OF HOUSTON	NGR 44-005-133	Sheldon, W. R.	31	3359
HQ-SG	Schmerling, E. R.	UNIV ILLINOIS-URBANA	NGR 14-005-181	Bowhill, S. A.	19	2012
HQ-SG	Rosendhal, J. D.	UNIV ILLINOIS-URBANA	NSG 7030	Swenson, G. W.	11	2024
HQ-SG	Berko, F. W.	UNIV OF IOWA	NGL 16-001-002	Van Allen, J. A.	13	2100
HQ-SG	Berko, F. W.	UNIV OF IOWA	NGL 16-001-043	Montgomery, D. C.	13	2101
HQ-SG	Roman, N. G.	UNIV MARYLAND-BALT	NGR 21-002-010	Misner, C. W.	11	2219
HQ-SG	Cauuffman, D. P.	UNIV MARYLAND-COL PK	NGL 21-002-005	Wu, C. S.	19	2232
HQ-SG	Dubin, M.	UNIV MARYLAND-COL PK	NGR 21-002-002	Opik, E. J.	11	2235
HQ-SG	Jordan, S. D.	UNIV MARYLAND-COL PK	NGR 21-002-007	Wilkerson, T. D.	11	2236
HQ-SG	Lazarus, A. J.	UNIV MARYLAND-COL PK	NGR 21-002-066	Earl, J. A.	11	2237
HQ-SG	Roman, N. G.	UNIV MARYLAND-COL PK	NGR 21-002-073	Griem, H. R.	11	2238
HQ-SG	Lazarus, A. J.	UNIV MARYLAND-COL PK	NGR 21-002-224	Gloeckler, G.	11	2241
HQ-SG	Bogges, N. W.	UNIV MARYLAND-COL PK	NGR 21-002-301	Currie, D. G.	11	2247
HQ-SG	Kavanagh, L. D., Jr.	UNIV MARYLAND-COL PK	NGR 21-002-386	Matthews, D. L.	11	2257
HQ-SG	Weldon, J. M.	UNIV OF MASS-AMHERST	NGL 22-010-025	Strong, J.	11	2445
HQ-SG	Weldon, J. M.	UNIV OF MASS-AMHERST	NGR 22-010-039	Hueuenin, G. R.	11	2447
HQ-SG	Jordan, S. D.	UNIV MICH-ANN ARBOR	NGL 23-005-275	Mohler, O. C.	11	2483
HQ-SG	Cauuffman, D. P.	UNIV MICH-ANN ARBOR	NGR 23-005-015	Nagy, A. F.	31	2485
HQ-SG	Berko, F. W.	UNIV MICH-ANN ARBOR	NGR 23-005-320	Samir, U.	13	2488
HQ-SG	Berko, F. W.	UNIV MICH-ANN ARBOR	NGR 23-005-360	Sharp, W. E.	13	2489
HQ-SG	Rosendhal, J. D.	UNIV MICH-ANN ARBOR	NGR 23-005-464	Hiltner, W. A.	11	2490
HQ-SG	Dubin, M.	UNIV MICH-ANN ARBOR	NGR 23-005-540	Bartman, F. L.	31	2495
HQ-SG	Weldon, J. M.	UNIV MICH-ANN ARBOR	NGR 23-005-543	Teske, R. G.	11	2496
HQ-SG	Timothy, A. F.	UNIV MICH-ANN ARBOR	NSG 7004	Haddock, F. T.	13	2508
HQ-SG	Ubin, M. D.	UNIV MICH-ANN ARBOR	NSG 7137	Donahue, T. M.	11	2509
HQ-SG	Cauuffman, D. P.	U MINN-MNPLS-ST PAUL	NGL 24-005-008	Winckler, J. R.	13	2533
HQ-SG	Lazarus, A. J.	U MINN-MNPLS-ST PAUL	NGR 24-005-050	Waddington, C. J.	11	2538
HQ-SG	Kavanagh, L. D., Jr.	U MINN-MNPLS-ST PAUL	NGR 24-005-111	Winckler, J. R.	13	2539
HQ-SG	Dubin, M.	U MINN-MNPLS-ST PAUL	NGR 24-005-196	Nier, A. O.	31	2540
HQ-SG	Kavanagh, L. D., Jr.	U MINN-MNPLS-ST PAUL	NGR 24-005-253	Cahill, L. J., Jr.	13	2543
HQ-SG	Kavanagh, L. D., Jr.	U MINN-MNPLS-ST PAUL	NSG 7005	Winckler, J. R.	13	2549
HQ-SG	Berko, F. W.	U MINN-MNPLS-ST PAUL	NSG 7108	Kellogg, P. J.	19	2550
HQ-SG	Roman, N. G.	U MINN-MNPLS-ST PAUL	NSR 24-005-245	Luyten, W. J.	11	2552
HQ-SG	Jordan, S. D.	UNIV NEW HAMPSHIRE	NGL 30-002-018	Chupp, E. L.	13	2636
HQ-SG	Lazarus, A. J.	UNIV NEW HAMPSHIRE	NGL 30-002-021	Chupp, E. L.	11	2637
HQ-SG	Opp, A. G.	UNIV NEW HAMPSHIRE	NGR 30-002-052	Webber, W. R.	11	2638
HQ-SG	Berko, F. W.	UNIV NEW HAMPSHIRE	NGR 30-002-054	Arnoldy, R. L.	13	2639
HQ-SG	Timothy, A. F.	UNIV NEW HAMPSHIRE	NGR 30-002-104	Chupp, E. L.	13	2640
HQ-SG	Dubin, M.	UNIV OF NEW MEXICO	NGR 32-004-068	Peterson, A. W.	11	2731
HQ-SG	Calahan, H. D.	UNIV OF NEW MEXICO	NGR 32-004-086	Ahluwalia, H. S.	13	2732
HQ-SG	Dubin, M.	UNIV OF PITTSBURGH	NGR 39-011-113	Zipf, E. C., Jr.	31	3158
HQ-SG	Berko, F. W.	UNIV OF SOUTHERN CAL	NGR 05-018-181	Intriligator, D. S.	13	1655
HQ-SG	Calahan, H. D.	UNIV OF SOUTHERN CAL	NGR 05-018-185	Intriligator, D. S.	13	1656
HQ-SG	Weldon, J. M.	UNIV TENNESSEE-KNOXV	NSG 7049	Sellin, I. A.	11	3231
HQ-SG	Rosendhal, J. D.	UNIV TEXAS-AUSTIN	NGR 44-012-209	Vanden Bout, P. A.	11	3387

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-SG	Jordan, S. D.	UNIV TEXAS-AUSTIN	NGR 44-012-258	Bengtson, P. D.	11	3394
HQ-SG	Berko, F. W.	UNIV TEXAS-DALLAS	NGR 44-004-030	Heikkila, W. J.	13	3417
HQ-SG	Berko, F. W.	UNIV TEXAS-DALLAS	NGR 44-004-120	Hanson, W. B.	31	3419
HQ-SG	Berko, F. W.	UNIV TEXAS-DALLAS	NGR 44-004-124	Heikkila, W. J.	13	3420
HQ-SG	Opp, A. G.	UNIV TEXAS-DALLAS	NGR 44-004-133	Allum, F. R.	11	3421
HQ-SG	Dubin, M.	UNIV TEXAS-DALLAS	NGR 44-004-142	Tinsley, B. A.	19	3422
HQ-SG	Schmerling, E. R.	UNIV TEXAS-DALLAS	NGR 44-004-150	Heikkila, W. J.	31	3423
HQ-SG	Schmerling, E. R.	UNIV TEXAS-DALLAS	NSG 7107	Hoffman, J. H.	31	3425
HQ-SG	Berko, F. W.	UNIV TEXAS-DALLAS	NSR 44-004-041	Heikkila, W. J.	13	3426
HQ-SG	Berko, F. W.	UNIV TEXAS-DALLAS	NSR 44-004-089	Hoffman, J. H.	13	3427
HQ-SG	Dubin, M.	UNIV OF TOLEDO	NGR 36-010-022	Witt, A. D.	11	3046
HQ-SG	Roman, N. G.	UNIV OF TOLEDO	NSG 7041	Witt, A. N.	11	3051
HQ-SG	Rosendahl, J. D.	UNIV OF TOLEDO	NSG 7138	Molnar, M. R.	11	3052
HQ-SG	Roman, N. G.	UNIV OF VIRGINIA	NGL 47-005-066	Frederick, L. W.	11	3568
HQ-SG	Dubin, M.	UNIV OF WASHINGTON	NGR 48-002-033	Hodge, P. W.	11	3643
HQ-SG	Berko, F. W.	UNIV OF WASHINGTON	NGR 48-002-154	Parks, G. K.	13	3652
HQ-SG	Rosendhal, J. D.	UNIV WISC-MADISON	NGL 50-002-013	Code, A. D.	11	3687
HQ-SG	Lazarus, A. J.	UNIV WISC-MADISON	NGL 50-002-044	Kraushaar, W. L.	11	3688
HQ-SG	Berko, F. W.	UNIV WISC-MADISON	NGR 50-002-162	Scherb, F.	13	3692
HQ-SG	Boggess, N. W.	UNIV WISC-MADISON	NSG 7033	Scherb, F.	11	3702
HQ-SG	Roman, N. G.	UNIV WISC-MADISON	NSG 7050	Code, A. D.	11	3703
HQ-SG	Rosendhal, J. D.	UNIV WISC-MADISON	NSG 7133	Savage, B. D.	11	3704
HQ-SG	Opp, A. G.	UNIV OF WYOMING	NGR 51-001-035	Tompkins, D. R., Jr.	13	3713
HQ-SG	Berko, F. W.	WASHINGTON UNIVERSTY	NGL 26-008-057	Abrahamshrauner, B.	13	2602
HQ-SG	Lazarus, A. J.	WASHINGTON UNIVERSTY	NGR 26-008-001	Klarmann, J.	11	2604
HQ-SG	Boggess, N. W.	WASHINGTON UNIVERSTY	NGR 26-008-069	Friedlander, M. W.	11	2605
HQ-SG	Roman, N. G.	WESLEYAN UNIVERSITY	NGR 07-006-004	Page, T.	11	1748
HQ-SG	Schmerling, E. R.	YALE UNIVERSITY	NGR 07-004-109	Walker, J. C.	31	1755
HQ-SL	Young, R. S.	BOSTON UNIVERSITY	NGR 22-004-025	Margulis, L.	32	2293
HQ-SL	Brunk, W. E.	BRIGHAM YOUNG UNIV	NGR 45-001-032	Jones, D. E.	11	3446
HQ-SL	Dwornik, S. E.	BROWN UNIVERSITY	NGR 40-002-088	Mutch, T. A.	32	3172
HQ-SL	Brunk, W. E.	CALIF INST OF TECH	NGL 05-002-003	Muhleman, D. O.	11	1196
HQ-SL	Brunk, W. E.	CALIF INST OF TECH	NGL 05-002-140	Munch, G.	11	1203
HQ-SL	Brunk, W. E.	CALIF INST OF TECH	NGR 05-002-114	Muhleman, D. O.	11	1210
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NGR 05-002-117	Murray, B. C.	32	1211
HQ-SL	Young, R. S.	CALIF INST OF TECH	NGR 05-002-121	Horowitz, N. H.	51	1212
HQ-SL	Brunk, W. E.	CALIF INST OF TECH	NGR 05-002-185	Westphal, J. A.	11	1215
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NGR 05-002-302	Shoemaker, E. M.	32	1221
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NGR 05-002-303	Shoemaker, E. M.	32	1222
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NGR 05-002-305	Murray, B. C.	32	1223
HQ-SL	Young, R. S.	CALIF INST OF TECH	NGR 05-002-310	Bonner, J.	32	1225
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NGR 05-002-316	Anderson, D. L.	32	1227
HQ-SL	Fellows, R. F.	CALIF INST OF TECH	NSG 7094	Neugebauer, G.	32	1235
HQ-SL	Fellows, R. F.	CALIF INST OF TECH	NSG 7112	Murray, B. C.	31	1236
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NSG 7125	Albee, A. L.	19	1237
HQ-SL	Brunk, W. E.	CALIF INST OF TECH	NSG 7136	Leighton, R. B.	11	1239
HQ-SL	Young, R. S.	CAL STATE U-FULLERTN	NGR 05-071-008	Wegner, P. A.	12	1252
HQ-SL	Raring, R. H.	CORNELL UNIVERSITY	NASW 2445	Unavailable	32	2793
HQ-SL	Tarver, P.	CORNELL UNIVERSITY	NASW 2573	Wehe, R. L.	49	2794
HQ-SL	Tarver, P.	CORNELL UNIVERSITY	NASW 2750	Wehe, R. L.	49	2795
HQ-SL	Fellows, R. F.	CORNELL UNIVERSITY	NGL 33-010-082	Sagan, C. E.	31	2800
HQ-SL	Fellows, R. F.	CORNELL UNIVERSITY	NGL 33-010-186	Gierasch, P. J.	31	2802
HQ-SL	Young, R. S.	CORNELL UNIVERSITY	NGR 33-010-101	Sagan, C. E.	12	2804
HQ-SL	Geib, D. S.	CORNELL UNIVERSITY	NGR 33-010-127	Duxbury, J. M.	51	2806
HQ-SL	Cauffman, D. P.	CORNELL UNIVERSITY	NGR 33-010-161	Farley, D. T.	13	2810
HQ-SL	Brunk, W. E.	CORNELL UNIVERSITY	NGR 33-010-210	Harwit, M. O.	11	2818
HQ-SL	Dwornik, S. E.	CORNELL UNIVERSITY	NGR 33-010-220	Sagan, C. E.	32	2819
HQ-SL	Brunk, W. E.	CORNELL UNIVERSITY	NSG 7126	Veverka, J.	11	2825

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-SL	Young, R. S.	FLORIDA STATE UNIV	NGR 10-004-041	Larock, P. A.	51	1836
HQ-SL	Brunk, W. E.	FLORIDA STATE UNIV	NGR 10-004-056	Hunt, R. H.	11	1837
HQ-SL	Hall, L. B.	GEORGE WASHINGTON U	NASW 2768	Unavailable	59	1790
HQ-SL	Fellows, R. F.	GEORGIA INST OF TECH	NGL 11-002-004	Edwards, H. D.	31	1902
HQ-SL	Young, R. S.	GEORGIA INST OF TECH	NSG 7069	Hubbard, J. S.	51	1922
HQ-SL	Dwornik, S. E.	HAMILTON COLLEGE	NGR 33-192-001	Potter, D. B.	32	2827
HQ-SL	Hall, L. B.	HARDIN-SIMMONS UNIV	NGR 44-095-001	Foster, T. L.	51	3258
HQ-SL	Young, R. S.	HARVARD UNIVERSITY	NGL 22-007-069	Barghoorn, E. S.	32	2308
HQ-SL	Fellows, R. F.	HARVARD UNIVERSITY	NGL 22-007-228	Goody, R. M.	31	2310
HQ-SL	Fellows, R. F.	HARVARD UNIVERSITY	NGR 22-007-242	Goody, R. M.	31	2314
HQ-SL	Fellows, R. F.	HARVARD UNIVERSITY	NGR 22-007-267	McElroy, M. B.	31	2317
HQ-SL	Dwornik, S. E.	HARVARD UNIVERSITY	NGR 22-007-269	Cameron, A. G.	32	2318
HQ-SL	Fellows, R. F.	HARVARD UNIVERSITY	NSG 7095	Pipkin, F. M.	31	2327
HQ-SL	Young, R. S.	INDIANA U-BLOOMINGTN	NGR 15-003-118	Hayes, J. M.	32	2037
HQ-SL	Fellows, R. F.	KANSAS STATE UNIV	NGL 17-001-026	Williams, D. P.	31	2105
HQ-SL	Brunk, W. E.	MASS INST OF TECH	NGL 22-009-016	Barrett, A. H.	32	2360
HQ-SL	Fellows, R. F.	MASS INST OF TECH	NGL 22-009-521	Lewis, J. S.	31	2368
HQ-SL	Young, R. S.	MASS INST OF TECH	NGR 22-009-005	Biemann, K.	51	2372
HQ-SL	Young, R. S.	MASS INST OF TECH	NGR 22-009-277	Rich, A.	12	2374
HQ-SL	Brunk, W. E.	MASS INST OF TECH	NGR 22-009-473	McCord, T. B.	11	2379
HQ-SL	Brunk, W. E.	MASS INST OF TECH	NGR 22-009-672	Pettengill, G. H.	11	2387
HQ-SL	Fellows, R. F.	MASS INST OF TECH	NGR 22-009-804	Shapiro, I. I.	31	2405
HQ-SL	Brunk, W. E.	NEW MEX ST U-LAS CR	NGL 32-003-001	Beebe, R. F.	11	2707
HQ-SL	Dwornik, S. E.	NEW MEX ST U-LAS CR	NGR 32-003-075	Smith, B. A.	32	2709
HQ-SL	Fellows, R. F.	NEW MEX ST U-LAS CR	NGR 32-003-076	Smith, B. A.	31	2710
HQ-SL	Hall, L. B.	NO DAKOTA STATE UNIV	NGR 35-001-012	Hill, T. W.	12	2970
HQ-SL	Young, R. S.	PENNSYLVANIA STATE U	NGR 39-009-180	Casida, L. E., Jr.	51	3128
HQ-SL	Fellows, R. F.	POLY INST OF NY	NGR 33-006-068	Gross, S. H.	31	2856
HQ-SL	Young, R. S.	POLY INST OF NY	NGR 33-006-070	Eirich, F. R.	12	2857
HQ-SL	Brunk, W. E.	PRINCETON UNIVERSITY	NGR 31-001-242	Smith, W. H.	11	2668
HQ-SL	Brunk, W. E.	PRINCETON UNIVERSITY	NSG 7053	Danielson, R. E.	11	2684
HQ-SL	Tarver, P.	PRINCETON UNIVERSITY	NSR 31-001-313	Layton, J. P.	42	2690
HQ-SL	Fellows, R. F.	RENSSELAER POLY-NY	NGL 33-018-007	Harteck, P.	31	2869
HQ-SL	Tarver, P.	RENSSELAER POLY-NY	NGL 33-018-091	Yerazunis, S. W.	49	2870
HQ-SL	Young, R. S.	RENSSELAER POLY-NY	NGR 33-018-148	Ferris, J. P.	12	2871
HQ-SL	Geib, D. S.	RENSSELAER POLY-NY	NSG 7065	Wedler, F. C.	51	2878
HQ-SL	Fellows, R. F.	RICE UNIVERSITY	NSG 7043	Chamberlain, J. W.	31	3289
HQ-SL	Fellows, R. F.	ST LOUIS UNIVERSITY	NGR 26-006-042	Pallman, A. J.	31	2581
HQ-SL	Young, R. S.	SO ILL UNIV-CARBONDL	NGR 14-008-026	Yopp, J. H.	51	1973
HQ-SL	Fellows, R. F.	STANFORD UNIVERSITY	NGL 05-020-014	Howard, H. T.	31	1346
HQ-SL	Young, R. S.	STANFORD UNIVERSITY	NGL 05-020-582	Bonner, W. A.	59	1357
HQ-SL	Young, R. S.	STANFORD UNIVERSITY	NGR 05-020-004	Lederberg, J.	51	1359
HQ-SL	Dwornik, S. E.	STANFORD UNIVERSITY	NGR 05-020-649	Howard, H. T.	32	1375
HQ-SL	Young, R. S.	STATE UNIV NY-BUFFAL	NGR 33-015-002	Danielli, J. F.	12	2892
HQ-SL	Dwornik, S. E.	STATE UNIV NY-BUFFAL	NGR 33-015-108	King, J. S.	32	2893
HQ-SL	Fellows, R. F.	STATE U NY-STONY BRK	NGR 33-015-139	Varanasi, P.	31	2900
HQ-SL	Brunk, W. E.	STATE U NY-STONY BRK	NGR 33-015-141	Owen, T.	11	2901
HQ-SL	Young, R. S.	STATE U NY-STONY BRK	NGR 33-015-169	Owen, T.	12	2906
HQ-SL	Fellows, R. F.	TEXAS A&M UNIVERSITY	NGR 44-001-117	Plass, G. N.	31	3323
HQ-SL	Young, R. S.	TEXAS A&M UNIVERSITY	NSG 7037	Fendler, J. H.	12	3327
HQ-SL	Dwornik, S. E.	TULANE UNIVERSITY	NGR 19-002-038	Meyer, J. D.	32	2184
HQ-SL	Young, R. S.	UNIV ALA-BIRMINGHAM	NGR 01-010-001	Lacey, J. C., Jr.	12	1039
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NGL 03-002-002	Sonett, C. P.	11	1132
HQ-SL	Fellows, R. F.	UNIV OF ARIZONA	NGL 03-002-019	Hoenig, S. A.	31	1135
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NGL 03-002-122	Roemer, E.	11	1138
HQ-SL	Young, R. S.	UNIV OF ARIZONA	NGR 03-002-171	Nagy, B.	32	1143
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NGR 03-002-219	Gehrels, A. M.	11	1145
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NGR 03-002-356	Low, F. J.	11	1149

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-SL	Dwornik, S. E.	UNIV OF ARIZONA	NGR 03-002-370	Sonett, C. P.	32	1151
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7045	Hubbard, W. B., Jr.	11	1169
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7070	Fink, U. W.	11	1170
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7114	Unavailable	11	1172
HQ-SL	Fe, R. F.	UNIV OF ARIZONA	NSG 7123	Unavailable	11	1173
HQ-SL	Dwornik, S. E.	U ARKANSAS-MONTICELLO	NGR 04-008-001	Dehon, R. A.	32	1181
HQ-SL	Young, R. S.	UNIV CALIF-BERKELEY	NGL 05-003-003	Calvin, M.	32	1434
HQ-SL	Fellows, R. F.	UNIV CALIF-BERKELEY	NGL 05-003-286	Pimental, G. C.	31	1438
HQ-SL	Brunk, W. E.	UNIV CALIF-BERKELEY	NGR 05-003-452	Townes, C. H.	11	1451
HQ-SL	Young, R. S.	UNIV CALIF-BERKELEY	NGR 05-003-460	Jukes, J. H.	12	1452
HQ-SL	Young, R. S.	UNIV CALIF-L ANGELES	NGR 05-007-215	Libby, W. F.	32	1523
HQ-SL	Young, R. S.	UNIV CALIF-L ANGELES	NGR 05-007-221	Kaplan, I. R.	32	1524
HQ-SL	Dwornik, S. E.	UNIV CALIF-L ANGELES	NGR 05-007-317	Schubert, G.	32	1528
HQ-SL	Young, R. S.	UNIV CALIF-L ANGELES	NGR 05-007-407	Schopf, J. W.	32	1536
HQ-SL	Fellows, R. F.	UNIV CALIF-L ANGELES	NGR 05-007-437	Kieffer, H. H.	31	1540
HQ-SL	Dwornik, S. E.	UNIV CALIF-L ANGELES	NSG 7113	Kaula, W. M.	11	1551
HQ-SL	Young, R. S.	UNIV CALIF-SAN DIEGO	NGR 05-009-213	Yayanos, A. A.	51	1584
HQ-SL	Young, R. S.	UNIV CALIF-SAN DIEGO	NGR 05-009-218	Miller, S. L.	12	1585
HQ-SL	Dwornik, S. E.	UNIV CALIF-SAN DIEGO	NSG 7102	Alfven, H.	32	1599
HQ-SL	Young, R. S.	UNIV CALIF-S BARBARA	NGR 05-010-035	Cloud, P. E.	32	1607
HQ-SL	Dwornik, S. E.	UNIV CALIF-S BARBARA	NGR 05-010-062	Peale, S. J.	32	1608
HQ-SL	Dwornik, S. E.	UNIV OF CHICAGO	NGR 14-001-135	Turkevich, A. L.	32	1991
HQ-SL	Fellows, R. F.	UNIV OF CHICAGO	NGR 14-001-194	Kaplan, L. D.	31	1994
HQ-SL	Young, R. S.	UNIV OF CHICAGO	NGR 14-001-203	Anders, E.	32	1995
HQ-SL	Dwornik, S. E.	UNIV OF CHICAGO	NGR 14-001-250	Turkevich, A. L.	13	2000
HQ-SL	Brunk, W. E.	UNIV OF CINCINNATI	NGR 36-004-075	Herget, P.	11	3035
HQ-SL	Fellows, R. F.	UNIV COLORADO-BOLDR	NGL 06-003-052	Barth, C. A.	31	1703
HQ-SL	Brunk, W. E.	UNIV COLORADO-BOLDR	NGR 06-003-127	Barth, C. A.	31	1708
HQ-SL	Dwornik, S. E.	UNIV COLORADO-BOLDR	NGR 06-003-199	Peterson, J. E.	32	1712
HQ-SL	Fellows, R. F.	UNIV COLORADO-BOLDR	NGR 06-003-201	Thomas, G. E.	31	1713
HQ-SL	Fellows, R. F.	UNIV OF FLORIDA	NGL 10-005-008	Green, A. S.	31	1848
HQ-SL	Dwornik, S. E.	UNIV OF GEORGIA	NGR 11-003-037	Howard, H. T.	32	1937
HQ-SL	Young, R. S.	UNIV OF HAWAII	NGL 12-001-042	Siegel, S. M.	51	1946
HQ-SL	Brunk, W. E.	UNIV OF HAWAII	NGL 12-001-057	Jefferies, J. T.	11	1947
HQ-SL	Young, R. S.	UNIV OF HAWAII	NGR 12-001-109	Folsome, C. E.	12	1949
HQ-SL	Brunk, W. E.	UNIV OF HAWAII	NSR 12-001-019	Jefferies, J. T.	11	1952
HQ-SL	Young, R. S.	UNIV OF HOUSTON	NGR 44-005-002	Oro, J.	32	3356
HQ-SL	Young, R. S.	UNIV OF HOUSTON	NGR 44-005-091	Becker, R. S.	12	3357
HQ-SL	Dwornik, S. E.	UNIV OF HOUSTON	NGR 44-005-131	King, E. A., Jr.	32	3358
HQ-SL	Brunk, W. E.	UNIV ILLINOIS-URBANA	NGR 14-005-176	Dickel, J. R.	11	2010
HQ-SL	Young, R. S.	UNIV ILLINOIS-URBANA	NSG 7044	Woese, C. R.	12	2025
HQ-SL	Dwornik, S. E.	UNIV OF KANSAS	NGR 17-002-106	Warnke, D. E.	32	2123
HQ-SL	Brunk, W. E.	UNIV MARYLAND-COL PK	NGR 21-002-199	Kundu, M. R.	11	2240
HQ-SL	Young, R. S.	UNIV MARYLAND-COL PK	NGR 21-002-317	Ponnamperuma, C. A.	12	2250
HQ-SL	Young, R. S.	UNIV MARYLAND-COL PK	NGR 21-002-425	Ponnamperuma, C. A.	12	2263
HQ-SL	Brunk, W. E.	UNIV OF MASS-AMHERST	NGL 22-010-023	Irvine, W. M.	11	2444
HQ-SL	Dwornik, S. E.	UNIV OF MASS-AMHERST	NGR 22-010-054	Hartshorn, J. H.	32	2448
HQ-SL	Dwornik, S. E.	UNIV OF MASS-AMHERST	NGR 22-010-076	McGill, G. E.	32	2449
HQ-SL	Young, R. S.	UNIV OF MIAMI	NGR 10-007-008	Fox, S. W.	12	1867
HQ-SL	Young, R. S.	UNIV OF MIAMI	NGR 10-007-052	Harada, K.	12	1868
HQ-SL	Fellows, R. F.	UNIV MICH-ANN ARBOR	NGR 23-005-094	Liu, V. C.	31	2486
HQ-SL	Fellows, R. F.	UNIV MICH-ANN ARBOR	NGR 23-005-561	Carignan, G. R.	31	2497
HQ-SL	Dwornik, S. E.	UNIV MICH-ANN ARBOR	NGR 23-005-563	Smith, C. I.	32	2498
HQ-SL	Fellows, R. F.	U MINN-MNPLS-ST PAUL	NGL 24-005-009	Nier, A. O.	31	2534
HQ-SL	Hall, L. B.	U MINN-MNPLS-ST PAUL	NGL 24-005-160	Straub, C. P.	51	2535
HQ-SL	Geib, D. S.	U MINN-MNPLS-ST PAUL	NGR 24-005-275	Swain, F. M.	12	2545
HQ-SL	Fellows, R. F.	UNIV NEBRASKA-LINCLN	NGR 28-004-021	Samson, J. A.	31	2618
HQ-SL	Dwornik, S. E.	UNIV OF NEW MEXICO	NGR 32-004-062	Elston, W. E.	32	2730

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-SL	Fellows, R. F.	UNIV OF PITTSBURGH	NGL 39-011-013	Fite, W. L.	31	3153
HQ-SL	Fellows, R. F.	UNIV OF PITTSBURGH	NGL 39-011-030	Zipf, E. C., Jr.	31	3154
HQ-SL	Fellows, R. F.	UNIV OF PITTSBURGH	NGR 39-011-137	Biondi, M. A.	31	3159
HQ-SL	Dwornik, S. E.	UNIV OF PITTSBURGH	NGR 39-011-146	Hapke, B.	32	3160
HQ-SL	Dwornik, S. E.	UNIV OF PITTSBURGH	NSG 7147	Unavailable	11	3166
HQ-SL	Young, R. S.	UNIV OF ROCHESTER	NGR 33-019-002	Hempfling, W. P.	51	2923
HQ-SL	Dwornik, S. E.	UNIV OF SANTA CLARA	NGR 05-017-037	Greeley, R.	32	1638
HQ-SL	Fellows, R. F.	UNIV OF SO CAROLINA	NGL 41-002-003	Durig, J. R.	31	3190
HQ-SL	Young, R. S.	UNIV OF SO CAROLINA	NGR 41-002-034	Rohlfing, D. L.	12	3191
HQ-SL	Dwornik, S. E.	UNIV OF SO CAROLINA	NSG 7076	Nummedal, D.	32	3192
HQ-SL	Young, R. S.	UNIV OF SO CAROLINA	NSG 7096	Rohlfing, D. L.	51	3193
HQ-SL	Fellows, R. F.	UNIV OF SOUTHERN CAL	NGR 05-018-178	Maxworthy, T.	31	1653
HQ-SL	Fellows, R. F.	UNIV OF SOUTHERN CAL	NGR 05-018-180	Judge, D. L.	31	1654
HQ-SL	Fellows, R. F.	UNIV TENNESSEE-KNOXV	NGL 43-001-006	Gailar, N. M.	31	3219
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGL 44-012-006	Cogdell, J. R.	11	3380
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGL 44-012-055	Douglas, J. N.	11	3382
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGR 44-012-152	Trafton, L.	11	3384
HQ-SL	Dwornik, S. E.	UNIV TEXAS-AUSTIN	NGR 44-012-194	Ingerson, F. E.	32	3386
HQ-SL	Young, R. S.	UNIV TEXAS-AUSTIN	NGR 44-012-225	Parker, P. L.	32	3391
HQ-SL	Dwornik, S. E.	UNIV TEXAS-AUSTIN	NGR 44-012-279	Devaucouleurs, G. H.	32	3399
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGR 44-012-282	Mulholland, J. D.	11	3400
HQ-SL	Fellows, R. F.	UNIV TEXAS-DALLAS	NGL 44-004-001	Johnson, F. S.	31	3414
HQ-SL	Fellows, R. F.	UNIV TEXAS-DALLAS	NGL 44-004-026	Johnson, F. S.	31	3415
HQ-SL	Dwornik, S. E.	UNIV OF UTAH	NGR 45-003-095	Wilson, R. C.	32	3463
HQ-SL	Young, R. S.	UNIV OF VERMONT	NSG 7021	Thanassi, J. W.	12	3476
HQ-SL	Dwornik, S. E.	UNIV OF VIRGINIA	NGR 47-005-172	Howard, A.	32	3571
HQ-SL	Fellows, R. F.	UNIV OF WASHINGTON	NGR 48-002-073	Leovy, C. B.	31	3644
HQ-SL	Geib, D. S.	UNIV OF WASHINGTON	NGR 48-002-130	Gordon, M. P.	51	3647
HQ-SL	Brunk, W. E.	UNIV OF WASHINGTON	NGR 48-002-142	Jin, R. S.	11	3649
HQ-SL	Dwornik, S. E.	UNIV OF WASHINGTON	NGR 48-002-153	Vgolihi, F. C.	32	3651
HQ-SL	Fellows, R. F.	UNIV OF WASHINGTON	NGR 48-002-162	Leovy, C. B.	31	3653
HQ-SL	Fellows, R. F.	UNIV OF WASHINGTON	NSG 7085	Leovy, C. B.	31	3656
HQ-SL	Fellows, R. F.	UNIV WISC-MADISON	NGR 50-002-189	Suomi, V. E.	31	3694
HQ-SL	Dwornik, S. E.	UNIV WISC-PARKSIDE	NGR 50-009-001	Smith, E. I.	32	3706
HQ-SL	Geib, D. S.	UTAH STATE UNIV	NGR 45-002-008	Salisbury, F. B.	51	3471
HQ-SL	Young, R. S.	UTAH STATE UNIV	NSG 7038	Swanson, L. W.	32	3474
HQ-SL	Fellows, R. F.	VIRGINIA POLY INST	NGL 47-004-080	McGee, H. A.	11	3599
HQ-SL	Dwornik, S. E.	VIRGINIA POLY INST	NSG 7111	Unavailable	32	3627
HQ-SL	Dwornik, S. E.	VIRGINIA STATE COL	NGR 47-014-004	Gipson, M., Jr.	32	3629
HQ-SL	Dwornik, S. E.	WASHINGTON UNIVERSTY	NSG 7087	Arvidson, R. E.	32	2610
HQ-SL	Dwornik, S. E.	WEST TEXAS ST UNIV	NGR 44-015-003	Underwood, J. R.	32	3442
HQ-SL	Fellows, R. F.	YALE UNIVERSITY	NGL 07-004-043	Cross, R. J., Jr.	31	1752
HQ-SL	Young, R. S.	YALE UNIVERSITY	NGR 07-004-009	Morowitz, H. J.	51	1754
HQ-SL	Dwornik, S. E.	YALE UNIVERSITY	NGR 07-004-157	Skinner, B. J.	32	1757
HQ-SM	Hanley, J. B.	ARIZONA STATE UNIV	NGL 03-001-001	Moore, C. B.	32	1097
HQ-SM	Stuart-Alexander, D. E.	ARIZONA STATE UNIV	NSG 7040	Larimer, J. W.	32	1100
HQ-SM	Bryson, R. P.	BOSTON UNIVERSITY	NGR 22-004-027	Brewer, T.	32	2294
HQ-SM	Kosofsky, L. J.	BROWN UNIVERSITY	NASW 2827	Head, J. W., III	32	3169
HQ-SM	Alexander, D. E.	BROWN UNIVERSITY	NGR 40-002-116	Head, J. W., III	32	3174
HQ-SM	Bryson, R. P.	CALIF INST OF TECH	NGL 05-002-069	Anderson, D. L.	32	1199
HQ-SM	Bryson, R. P.	CALIF INST OF TECH	NGL 05-002-105	Ahrens, T. J.	32	1200
HQ-SM	Bryson, R. P.	CALIF INST OF TECH	NSG 7023	Feldman, P. D.	32	1233
HQ-SM	Bryson, R. P.	CALIF INST OF TECH	NSG 7084	Wasserburg, G. J.	32	1234
HQ-SM	Bryson, R. P.	CALIF INST OF TECH	NSG 7129	Ahrens, T. J.	32	1238
HQ-SM	Kosofsky, L. J.	CITY U N Y-GRAD SCHL	NSG 7028	Saxena, S. K.	32	2753
HQ-SM	Bryson, R. P.	COLLEGE VIRGIN ISLND	NGR 52-083-003	Adams, J. B.	32	3717
HQ-SM	Bryson, R. P.	CORNELL UNIVERSITY	NGL 33-010-005	Gold, T.	32	2796
HQ-SM	Kosofsky, L. J.	CORNELL UNIVERSITY	NGR 33-010-108	Turcotte, D. L.	32	2805

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HQ-SM	Kosofsky, L. J.	CORNELL UNIVERSITY	NGR 33-010-178	Kuckes, A. F.	32	2812
HQ-SM	Kosofsky, L. J.	FAIRLEIGH-DICKNSON U	NGL 31-006-010	Adams, J. B.	32	2641
HQ-SM	Kosofsky, L. J.	FAIRLEIGH-DICKNSON U	NSG 7047	Hartung, J. B.	32	2643
HQ-SM	Bryson, R. P.	ILL INST OF TECH	NGR 14-004-049	Higgins, G. T.	39	1956
HQ-SM	Kosofsky, L. J.	LEHIGH UNIVERSITY	NGR 39-007-043	Goldstein, J. I.	32	3101
HQ-SM	Kosofsky, L. J.	MASS INST OF TECH	NGL 22-009-187	Press, F.	32	2365
HQ-SM	Kosofsky, L. J.	MASS INST OF TECH	NGR 22-009-790	McCord, T. P.	32	2402
HQ-SM	Kosofsky, L. J.	MASS INST OF TECH	NSG 7010	Counselman, H. C. C., III	32	2427
HQ-SM	Kosofsky, L. J.	MASS INST OF TECH	NSG 7048	McCord, T. B.	32	2428
HQ-SM	Kosofsky, L. J.	MASS INST OF TECH	NSG 7077	Lewis, J. S.	32	2429
HQ-SM	Kosofsky, L. J.	MASS INST OF TECH	NSG 7081	Toksoz, M. N.	32	2430
HQ-SM	Kosofsky, L. J.	MASS INST OF TECH	NSG 7115	Madden, T. R.	32	2432
HQ-SM	Kosofsky, L. J.	MASS INST OF TECH	NSG 7118	Counselman, H. C. C., III	32	2433
HQ-SM	Bryson, R. P.	NORTHWESTERN UNIV	NGL 14-007-016	Hynek, J. A.	32	1960
HQ-SM	Bryson, R. P.	OREGON STATE UNIV	NGL 38-002-020	Schmitt, R. A.	32	3075
HQ-SM	Bryson, R. P.	PENNSYLVANIA STATE U	NGL 39-009-010	Gold, D. P.	32	3121
HQ-SM	Stuart-Alexander, D. E.	PENNSYLVANIA STATE U	NSG 7120	Muan, A.	32	3141
HQ-SM	Strickland, A. T.	PRINCETON UNIVERSITY	NGR 31-001-202	Dicke, R. H.	13	2665
HQ-SM	Bryson, R. P.	PRINCETON UNIVERSITY	NGR 31-001-274	Phinney, R. A.	32	2671
HQ-SM	Kosofsky, L. J.	PRINCETON UNIVERSITY	NSG 7080	Phinney, R. A.	32	2685
HQ-SM	Bryson, R. P.	PURDUE UNIVERSITY	NGL 15-005-140	Lipschutz, M. E.	32	2051
HQ-SM	Stuart-Alexander, D. E.	RICE UNIVERSITY	NSG 7025	Lenzen, K. H.	31	3287
HQ-SM	Hanley, J. B.	RICE UNIVERSITY	NSG 7032	Michel, F. C.	31	3288
HQ-SM	Bryson, R. P.	SAN DIEGO STATE UNIV	NSG 7026	Reh fuss, D. E.	32	1271
HQ-SM	Bryson, R. P.	STANFORD UNIVERSITY	NGL 05-020-232	Kovach, R. L.	39	1350
HQ-SM	Bryson, R. P.	STANFORD UNIVERSITY	NSG 7029	Tyler, G. L.	32	1401
HQ-SM	Bryson, R. P.	STANFORD UNIVERSITY	NSG 7117	Nur, A. M.	32	1406
HQ-SM	Kosofsky, L. J.	STATE U NY-STONY BRK	NSG 7036	Hartung, J. B.	32	2913
HQ-SM	Bryson, R. P.	TEXAS A&M UNIVERSITY	NGR 44-001-152	Rowe, M. W.	32	3324
HQ-SM	Hanley, J. B.	UNIV OF ARIZONA	NGL 03-002-191	Strom	32	1139
HQ-SM	Hanley, J. B.	UNIV OF ARIZONA	NSG 7011	Wilkening, L. L.	32	1165
HQ-SM	Hanley, J. B.	UNIV OF ARIZONA	NSG 7014	Whitaker, E. A.	32	1166
HQ-SM	Hanley, J. B.	UNIV OF ARIZONA	NSG 7020	Sonett, C. P.	32	1167
HQ-SM	Bryson, R. P.	UNIV CALIF-BERKELEY	NGR 05-003-406	Mitchell, J. K.	32	1446
HQ-SM	Bryson, R. P.	UNIV CALIF-BERKELEY	NSG 7127	Unavailable	39	1471
HQ-SM	Bryson, R. P.	UNIV CALIF-DAVIS	NGR 05-004-074	Borg, R. J.	32	1485
HQ-SM	Bryson, R. P.	UNIV CALIF-L ANGELES	NGL 05-007-002	Stampfer, J. F., Jr.	32	1511
HQ-SM	Bryson, R. P.	UNIV CALIF-L ANGELES	NGL 05-007-006	Kennedy, G. C.	32	1515
HQ-SM	Strickland, A. T.	UNIV CALIF-L ANGELES	NGR 05-007-283	Kaula, W. M.	32	1526
HQ-SM	Bryson, R. P.	UNIV CALIF-L ANGELES	NGR 05-007-329	Wasson, J. T.	32	1531
HQ-SM	Bryson, R. P.	UNIV CALIF-L ANGELES	NGR 05-007-351	Coleman, P. J., Jr.	32	1534
HQ-SM	Bryson, R. P.	UNIV CALIF-L ANGELES	NSG 7052	Kieffer, S. W.	32	1550
HQ-SM	Bryson, R. P.	UNIV CALIF-SAN DIEGO	NGL 05-009-002	Arrhenius, G. O.	32	1565
HQ-SM	Bryson, R. P.	UNIV CALIF-SAN DIEGO	NGL 05-009-004	Arnold, J. R.	32	1566
HQ-SM	Bryson, R. P.	UNIV CALIF-SAN DIEGO	NGL 05-009-005	Suess, H. E.	19	1567
HQ-SM	Bryson, R. P.	UNIV CALIF-SAN DIEGO	NGR 05-005-005	Arnold, J. R.	32	1573
HQ-SM	Bryson, R. P.	UNIV CALIF-SAN DIEGO	NSG 7027	Arnold, J. R.	32	1597
HQ-SM	Bryson, R. P.	UNIV CALIF-SAN DIEGO	NSG 7121	MacDougall, J. D.	32	1600
HQ-SM	Bryson, R. P.	UNIV CALIF-S BARBARA	NSG 7122	Fuller, M. D.	32	1610
HQ-SM	Stuart-Alexander, D. E.	UNIV OF CHICAGO	NGL 14-001-010	Anders, E.	32	1984
HQ-SM	Stuart-Alexander, D. E.	UNIV OF CHICAGO	NGR 14-001-249	Grossman, L.	32	1999
HQ-SM	Strickland, A. T.	UNIV OF HAWAII	NASW 2326	Jefferies, J. T.	11	1943
HQ-SM	Strickland, A. T.	UNIV OF HAWAII	NGR 12-001-127	Jefferies, J. T.	32	1950
HQ-SM	Bryson, R. P.	UNIV OF HOUSTON	NGR 44-005-188	King, E. A., Jr.	32	3361
HQ-SM	Bryson, R. P.	UNIV OF IDAHO	NGR 13-001-014	Hall, W. B.	32	1953
HQ-SM	Strickland, A. T.	UNIV MARYLAND-COL PK	NGR 21-002-267	Currie, D. G.	13	2242
HQ-SM	Alexander, D. E.	UNIV MARYLAND-COL PK	NSG 7017	Wasilewski, P.	32	2283
HQ-SM	Kosofsky, L. J.	UNIV MARYLAND-COL PK	NSG 7046	Adler, I.	32	2284

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HQ-SM	Bryson, R. P.	UNIV MICH-ANN ARBOR	NGR 23-005-537	Evans, B. J.	32	2494
HQ-SM	Hanley, J. B.	UNIV OF NEW MEXICO	NGL 32-004-011	Elston, W. E.	32	2725
HQ-SM	Hanley, J. B.	UNIV OF NEW MEXICO	NGL 32-004-064	Keil, K.	32	2728
HQ-SM	Hanley, J. B.	UNIV OF NEW MEXICO	NSG 7066	Elston, W. E.	32	2736
HQ-SM	Bryson, R. P.	UNIV OREGON-EUGENE	NGR 38-003-020	Weill, D. F.	32	3080
HQ-SM	Kosofsky, L. J.	UNIV OF PENNSYLVANIA	NSG 7119	Friel, J. J.	32	3147
HQ-SM	Alexander, D. E.	UNIV OF PITTSBURGH	NGL 39-011-085	Hapke, B. W.	32	3156
HQ-SM	Bryson, R. P.	UNIV OF PITTSBURGH	NGR 39-011-156	Fuller, M.	32	3161
HQ-SM	Bryson, R. P.	UNIV OF SANTA CLARA	NSG 7013	Greeley, R.	32	1641
HQ-SM	Bryson, R. P.	UNIV TEXAS-AUSTIN	NGL 44-012-045	Clabaugh, S. E.	32	3381
HQ-SM	Strickland, A. T.	UNIV TEXAS-AUSTIN	NGR 44-012-165	Silverberg, E. C.	32	3385
HQ-SM	Strickland, A. T.	UNIV TEXAS-AUSTIN	NGR 44-012-219	Mulholland, J. D.	11	3388
HQ-SM	Hanley, J. B.	UNIV TEXAS-DALLAS	NSG 7034	Hodges, R. R., Jr.	31	3424
HQ-SM	Strickland, A. T.	UNIV TEXAS-GALVESTON	NSG 7074	Lammlein, D. R.	32	3436
HQ-SM	Bryson, R. P.	UNIV OF UTAH	NSG 7090	Ward, S. H.	32	3467
HQ-SM	Bryson, R. P.	UNIV OF VIRGINIA	NGR 47-005-176	Allen, R. O.	32	3572
HQ-SM	Hosterman, J. W.	WASHINGTON UNIVERSITY	NSG 7016	Hohenberg, C. M.	32	2609
HQ-SM	Bryson, R. P.	YALE UNIVERSITY	NGL 07-004-103	Skinner, B. J.	32	1753
HQ-SM	Kosofsky, L. J.	YALE UNIVERSITY	NGR 07-004-166	Turekian, K. K.	32	1758
HQ-SS	Hovnanian	MASS INST OF TECH	NGR 22-009-102	Biemann, K.	42	2373
HQ-SV	Goozh, P. E.	UNIV OF ROME	NASW 1761	Unavailable	49	3727
HQ-TN	Bavely, J. C.	UNIV OF ROME	NASW 2135	Broglia, L.	11	3728
HQ-U	Dixon, J. T.	SHAW UNIVERSITY	NASW 2793	Unavailable	99	2966

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APPENDIX D**

CROSS INDEX BY RTOP (Research and Technology Operating Plans)

Each entry represents a single grant or contract and there is one RTOP listed for each grant or contract. However, several grants or contracts may carry the same RTOP. The installation listed provided funding associated with the RTOP. A brief explanation of the RTOP system of notation appears in the prefatory pages.

RTOP NO.	INSTALLATION	INSTITUTION	ACC NO.	RTOP NO.	INSTALLATION	INSTITUTION	ACC NO.
10-00-00	HQ	BENNETT COLLEGE-NC	2929	124-00-00	HQ	CASE WESTERN RESERVE	2974
10-00-00	HQ	BOSTON UNIVERSITY	2297	124-00-00	HQ	PURDUE UNIVERSITY	2065
10-00-00	HQ	GEORGE WASHINGTON U	1805	125-00-00	ERC	SOUTHERN METHODIST U	3290
10-00-00	HQ	GOUCHER COLLEGE	2200	125-00-00	GSFC	UNIV OF NOTRE DAME	2067
10-00-00	HQ	HOWARD UNIVERSITY	1818	125-00-00	LARC	NO CAROLINA STATE U	2950
10-00-00	HQ	LINCOLN UNIV-PA	3108	125-00-00	MSFC	UNIV OKLAHOMA-NORMAN	3066
10-00-00	HQ	MOREHOUSE COLLEGE	1926	125-00-00	HQ	PENNSYLVANIA STATE U	3122
10-00-00	HQ	NM HIGHLANDS UNIV	2693	126-00-00	FRC	STANFORD UNIVERSITY	1356
10-00-00	HQ	NEW MEX ST U-LAS CR	2711	126-00-00	LARC	CORNELL UNIVERSITY	2799
10-00-00	HQ	NO CAR A&T STATE U	2942	126-00-00	LARC	OLD DOMINION UNIV	3511
10-00-00	HQ	NORTHWESTERN UNIV	1969	126-00-00	LARC	STANFORD UNIVERSITY	1355
10-00-00	HQ	OKLAHOMA STATE UNIV	3059	126-00-00	LARC	UNIV OF NEW MEXICO	2729
10-00-00	HQ	PRAIRIE VIEW A&M U	3266	126-00-00	LERC	CASE WESTERN RESERVE	2978
10-00-00	HQ	SHAW UNIVERSITY	2966	126-00-00	LERC	NORTHWESTERN UNIV	1966
10-00-00	HQ	SOUTHEASTN STATE COL	3063	126-00-00	LERC	PURDUE UNIVERSITY	2055
10-00-00	HQ	SO UNIV-BATON ROUGE	2172	126-00-00	LERC	UNIV ILLINOIS-URBANA	2011
10-00-00	HQ	SPELMAN COLLEGE	1933	126-00-00	LERC	PENNSYLVANIA STATE U	3115
10-00-00	HQ	TENNESSEE STATE UNIV	3204	126-00-00	ARC	WEST VIRGINIA UNIV	3660
10-00-00	HQ	TEXAS A&I UNIVERSITY	3294	127-00-00	ERC	BOSTON UNIVERSITY	2290
10-00-00	HQ	TUSKEGEE INSTITUTE	1037	127-00-00	LARC	COLUMBIA UNIVERSITY	2766
10-00-00	HQ	UNIV OF HOUSTON	3349	127-00-00	LARC	VIRGINIA COMMONWLTH U	3587
10-00-00	HQ	UNIV MICH-ANN ARBOR	2487	127-00-00	HQ	ALABAMA A&M UNIV	1000
10-00-00	HQ	UNIV OF NEW MEXICO	2733	128-00-00	LERC	PENNSYLVANIA STATE U	3117
10-00-00	HQ	UNIV TEXAS-EL PASO	3430	128-00-00	LERC	UNIV MICH-ANN ARBOR	2484
10-00-00	HQ	UNIV OF UTAH	3458	128-00-00	HQ	PENNSYLVANIA STATE U	3120
21-01-98	ARC	SAN JOSE STATE UNIV	1282	129-00-00	LERC	CATHOLIC UNIVERSITY	1772
21-02-98	ARC	UNIV OF SANTA CLARA	1631	129-00-00	HQ	CITY COLLEGE OF N Y	2746
21-02-98	ARC	UNIV OF SANTA CLARA	1639	129-00-00	HQ	NO CAROLINA STATE U	2946
43-00-00	GSFC	GEORGE WASHINGTON U	1788	129-00-00	HQ	UNIV OF FLORIDA	1850
51-02-00	GSFC	COPPIN STATE COLLEGE	2199	129-00-00	HQ	UNIV OF FLORIDA	1851
51-02-00	GSFC	LINCOLN UNIV-PA	3109	129-00-00	HQ	UNIV MARYLAND-COL PK	2248
53-04-00	WFC	UNIV MD-EASTRN SHORE	2285	129-00-00	HQ	UNIV MICH-ANN ARBOR	2481
73-36-06	KSC	UNIV OF FLORIDA	1842	129-00-00	HQ	UNIV OF SANTA CLARA	1636
12-00-00	LARC	COLLEGE OF WM & MARY	3480	133-00-00	LARC	UNIV MICH-ANN ARBOR	2503
12-00-00	HQ	MASS INST OF TECH	2386	133-00-00	MSFC	UNIV OKLAHOMA-NORMAN	3065
14-00-00	MSFC	ATHENS COLLEGE	1011	134-00-00	ARC	UNIV TEXAS-AUSTIN	3389
15-00-00	GSFC	LAVAL UNIVERSITY	3718	134-00-00	LERC	OHIO STATE UNIV	3009
15-00-00	GSFC	UNIV OF RHODE ISLAND	3178	135-00-00	LARC	MASS INST OF TECH	2362
15-00-00	MSFC	UNIV ALA-TUSCALOOSA	1074	136-00-00	ARC	UNIV OF WASHINGTON	3648
15-00-00	MSFC	VANDERBILT UNIVERSTY	3236	136-00-00	LARC	UNIV CALIF-SAN DIEGO	1580
20-00-00	ERC	COLUMBIA UNIVERSITY	2765	136-00-00	LERC	UNIV ILLINOIS-URBANA	2014
20-00-00	LERC	CLEVELAND STATE UNIV	2998	141-00-00	GSFC	JOHNS HOPKINS UNIV	2202
22-00-00	LERC	CITY COLLEGE OF N Y	2745	141-00-00	HQ	JOHNS HOPKINS UNIV	2216
24-00-00	LARC	MICHIGAN STATE UNIV	2454	141-00-00	HQ	SOUTHEASTN STATE COL	3060
24-00-00	LARC	NO CAROLINA STATE U	2947	141-00-00	HQ	SOUTHEASTN STATE COL	3061
24-00-00	LARC	UNIV MICH-ANN ARBOR	2482	141-00-00	HQ	SOUTHEASTN STATE COL	3062
24-00-00	LARC	UNIV OF VIRGINIA	3569	141-00-00	HQ	UNIV OF DENVER	1732
24-00-00	MSFC	PENNSYLVANIA STATE U	3114	141-00-00	HQ	UNIV OF PITTSBURGH	3167

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RTOP NO.	INSTAL-LATION	INSTITUTION	ACC NO.	RTOP NO.	INSTAL-LATION	INSTITUTION	ACC NO.
141-93-01	GSFC	UNIV OF CONNECTICUT	1745	161-02-04	ARC	UNIV CALIF-L ANGELES	1510
141-93-01	HQ	INDIANA U-BLOOMINGTN	2028	161-02-06	GSFC	OHIO UNIVERSITY	3023
141-93-01	HQ	INDIANA U-BLOOMINGTN	2029	161-02-07	HQ	OHIO STATE UNIV	3008
141-93-01	HQ	INDIANA U-BLOOMINGTN	2030	161-03-01	GSFC	CITY COLLEGE OF N Y	2740
141-93-01	HQ	UNIV OF GEORGIA	1935	161-03-01	GSFC	UNIV MARYLAND-COL PK	2264
141-93-01	HQ	UNIV OF GEORGIA	1936	161-03-02	GSFC	CITY COLLEGE OF N Y	2739
141-93-01	HQ	UNIV OF NEW MEXICO	2716	161-03-02	GSFC	OREGON STATE UNIV	3074
141-93-01	HQ	UNIV OF NEW MEXICO	2717	161-03-02	WFC	NO CAROLINA STATE U	2945
141-93-01	HQ	UNIV OF PITTSBURGH	3151	161-03-03	GSFC	UNIV TEXAS-AUSTIN	3401
141-93-01	HQ	UNIV OF PITTSBURGH	3152	161-03-04	GSFC	OHIO STATE UNIV	3013
141-93-01	HQ	UNIV OF SOUTHERN CAL	1649	161-05-02	GSFC	UNIV MARYLAND-COL PK	2266
141-93-01	HQ	UNIV OF SOUTHERN CAL	1650	161-05-02	WFC	UNIV MARYLAND-COL PK	2265
141-93-02	ARC	SAN JOSE STATE UNIV	1285	161-05-03	GSFC	MASS INST OF TECH	2409
141-93-02	GSFC	DELAWARE STATE COL	1760	161-05-07	GSFC	DUKE UNIVERSITY	2937
141-93-02	LARC	WEST VIRGINIA UNIV	3663	161-05-07	LARC	GEORGE WASHINGTON U	1798
141-93-02	LERC	MASS INST OF TECH	2335	161-05-07	LARC	HOFSTRA UNIVERSITY	2828
141-93-02	HQ	UNIV OF CHICAGO	2000	161-05-07	LARC	UNIV OF KANSAS	2106
141-93-02	HQ	UNIV OF MIAMI	1870	161-05-07	LARC	UNIV OF KANSAS	2106
141-94-00	HQ	UNIV OF DENVER	1733	161-05-07	LARC	WEST VIRGINIA UNIV	3662
141-95-01	GSFC	TEXAS A&M UNIVERSITY	3299	161-79-51	GSFC	UNIV MARYLAND-COL PK	2258
141-95-01	LARC	HAMPTON INSTITUTE	3500	162-01-02	MSFC	WAYNE STATE UNIV	2513
141-95-01	LARC	NTHWSTN ST COL-OKLA	3057	162-01-03	MSFC	STATE UNIV NY-BUFFAL	2887
141-95-01	LARC	OLD DOMINION UNIV	3554	164-00-00	GSFC	CITY COLLEGE OF N Y	2748
141-95-01	LARC	UNIV OF WYOMING	3715	164-21-80	GSFC	UNIV MARYLAND-COL PK	2252
141-95-02	ARC	STANFORD UNIVERSITY	1374	175-00-00	GSFC	UNIV OF SOUTHERN CAL	1652
141-95-02	GSFC	GALLAUDET COLLEGE	1787	175-11-42	GSFC	UNIV OF ARIZONA	1164
141-95-02	GSFC	HAHNEMANN MED COL	3096	175-11-42	GSFC	UNIV MICH-ANN ARBOR	2507
141-95-02	GSFC	ST U NY-DNST MED CTR	2915	175-11-44	GSFC	CITY COLLEGE OF N Y	2749
141-95-02	JSC	UNIV OF HOUSTON	3345	175-11-44	GSFC	COLUMBIA UNIVERSITY	2774
141-95-02	HQ	UNIV WISC-MADISON	3685	175-11-44	GSFC	NEW YORK UNIVERSITY	2850
150-00-00	GSFC	CAL STATE U-FULLERTN	1251	175-11-71	MSFC	COLORADO STATE UNIV	1669
150-00-00	MSFC	AUBURN UNIV-AUBURN	1014	175-11-71	MSFC	MASS INST OF TECH	2351
159-00-00	ARC	UNIV OF ARIZONA	1125	175-11-72	MSFC	UNIV MO-COLUMBIA	2585
160-00-00	GSFC	PURDUE UNIVERSITY	2056	175-11-72	MSFC	UNIV OF NEVADA-RENO	2622
160-00-00	GSFC	UNIV CALIF-L ANGELES	1498	175-21-11	ARC	SAN JOSE STATE UNIV	1296
160-00-00	GSFC	UNIV MICH-ANN ARBOR	2511	175-21-11	ARC	SAN JOSE STATE UNIV	1297
160-00-00	GSFC	UNIV OF WASHINGTON	3646	175-21-11	ARC	UNIV OF WASHINGTON	3637
160-00-00	MSFC	GEORGIA INST OF TECH	1892	175-21-31	LARC	COLORADO STATE UNIV	1684
160-00-00	WFC	STATE UNIV NY-BUFFAL	2890	175-21-31	LARC	COLORADO STATE UNIV	1685
160-00-00	HQ	COLORADO SCH OF MINE	1660	175-21-32	LARC	COLORADO STATE UNIV	1661
160-00-00	HQ	UNIV WISC-MADISON	3689	175-21-32	LARC	COLORADO STATE UNIV	1662
160-20-51	GSFC	UNIV MO-ROLLA	2593	175-21-32	LARC	DREXEL UNIVERSITY	3094
160-20-59	GSFC	UNIV MARYLAND-COL PK	2254	175-21-32	LARC	UNIV WISC-MADISON	3667
160-44-54	GSFC	MASS INST OF TECH	2378	175-21-32	LARC	VIRGINIA POLY INST	3591
160-44-64	LARC	UNIV MICH-ANN ARBOR	2501	175-21-45	GSFC	GEORGIA INST OF TECH	1886
160-44-64	LARC	UNIV NEW BRUNSWICK	3719	175-21-45	GSFC	UNIV MARYLAND-COL PK	2279
160-44-79	ARC	UNIV OF DENVER	1730	175-21-45	GSFC	UNIV MICH-ANN ARBOR	2512
160-75-01	WFC	VIRGINIA POLY INST	3595	175-21-46	GSFC	COLORADO STATE UNIV	1690
160-75-15	KSC	UNIV OF FLORIDA	1844	175-31-31	LARC	NO CAROLINA STATE U	2953
160-75-15	MSFC	AUBURN UNIV-AUBURN	1019	175-51-45	GSFC	UNIV WISC-MADISON	3675
160-75-22	ARC	SAN JOSE STATE UNIV	1302	175-61-41	GSFC	COLORADO STATE UNIV	1676
160-75-29	HQ	BOSTON UNIVERSITY	2292	175-61-41	GSFC	COLORADO STATE UNIV	1677
160-75-98	LARC	UNIV OF DELAWARE	1766	175-61-41	GSFC	UNIV MICH-ANN ARBOR	2468
161-00-00	LARC	VIRGINIA POLY INST	3611	175-61-41	GSFC	UNIV OF WASHINGTON	3655
161-01-02	GSFC	CALIF INST OF TECH	1232	175-61-41	GSFC	UNIV WISC-MADISON	3676
161-02-01	GSFC	COLORADO STATE UNIV	1683	175-61-42	GSFC	HARVARD UNIVERSITY	2321
161-02-01	GSFC	UNIV MARYLAND-COL PK	2262	175-61-42	GSFC	STANFORD UNIVERSITY	1399
161-02-03	GSFC	CORNELL UNIVERSITY	2823	175-61-42	GSFC	UNIV OF ARIZONA	1154
161-02-04	ARC	UNIV CALIF-BERKELEY	1430	175-61-61	WFC	OLD DOMINION UNIV	3560
				175-61-71	MSFC	DREXEL UNIVERSITY	3095

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RTOP NO.	INSTAL-LATION	INSTITUTION	ACC NO.	RTOP NO.	INSTAL-LATION	INSTITUTION	ACC NO.
175-61-71	MSFC	UNIV OKLAHOMA-NORMAN	3067	177-52-41	GSFC	UNIV MARYLAND-COL PK	2275
175-61-71	MSFC	UNIV TENNESSEE-KNOXV	3218	177-52-71	MSFC	AUBURN UNIV-AUBURN	1022
175-91-11	ARC	SAN JOSE STATE UNIV	1303	177-52-71	MSFC	LA STATE U-BAT ROUGE	2165
175-91-41	MSFC	TEXAS A&M UNIVERSITY	3302	177-52-71	MSFC	UNIV OF KENTUCKY	2142
176-10-42	GSFC	NEW YORK UNIVERSITY	2849	177-52-73	MSFC	UNIV TENNESSEE-KNOXV	3215
176-11-11	ARC	CAL STATE U-CHICO	1247	177-52-75	MSFC	MISSISSIPPI STATE U	2565
176-11-31	LARC	OLD DOMINION UNIV	3538	177-52-82	JSC	TEXAS A&M UNIVERSITY	3316
176-11-31	LARC	UNIV CALIF-L ANGELES	1542	177-53-11	ARC	DE ANZA COLLEGE	1260
176-14-31	LARC	VIRGINIA POLY INST	3614	177-53-41	GSFC	UNIV OF WYOMING	3710
176-21-31	LARC	CLEVELAND STATE UNIV	2999	177-53-71	MSFC	GEORGIA SOUTHWTN COL	1923
176-21-31	LARC	COLLEGE OF WM & MARY	3489	177-53-71	MSFC	UNIV ALA-TUSCALOOSA	1078
176-21-31	LARC	MARQUETTE UNIVERSITY	3665	177-53-71	MSFC	UNIV ALA-TUSCALOOSA	1079
176-21-31	LARC	OLD DOMINION UNIV	3547	177-54-11	ARC	UNIV CALIF-BERKELEY	1426
176-21-31	LARC	OLD DOMINION UNIV	3552	177-54-21	LERC	OHIO STATE UNIV	3021
176-21-31	LARC	UNIV OF KENTUCKY	2150	177-54-71	MSFC	LA STATE U-BAT ROUGE	2164
176-21-31	LARC	UNIV MICH-ANN ARBOR	2502	177-54-71	MSFC	UNIV ALA-HUNTSVILLE	1062
176-21-32	LARC	GEORGE WASHINGTON U	1799	177-54-71	MSFC	UNIV ALA-TUSCALOOSA	1076
176-24-31	LARC	GEORGE WASHINGTON U	1804	177-54-72	MSFC	UNIV TENNESSEE-KNOXV	3217
176-52-41	GSFC	AMERICAN UNIVERSITY	1768	177-55-35	LARC	UNIV OF RHODE ISLAND	3179
176-52-41	GSFC	NEW YORK UNIVERSITY	2835	177-55-81	JSC	TULANE UNIVERSITY	2179
176-52-41	GSFC	STANFORD UNIVERSITY	1400	177-56-91	KSC	UNIV OF MIAMI	1864
176-52-41	GSFC	UNIV MARYLAND-COL PK	2278	177-56-91	KSC	UNIV OF MIAMI	1865
176-53-12	ARC	UNIV CALIF-BERKELEY	1464	177-60-41	GSFC	UNIV OF NEVADA-RENO	2621
176-53-32	LARC	OLD DOMINION UNIV	3507	178-56-13	ARC	UNIV OF MONTANA	2612
176-53-71	MSFC	UNIV ALA-HUNTSVILLE	1052	178-57-81	GSFC	GEORGIA INST OF TECH	1888
176-53-71	MSFC	UNIV ALA-HUNTSVILLE	1059	179-11-13	MSFC	WASHINGTON ST UNIV	3657
176-53-71	MSFC	UNIV ALA-HUNTSVILLE	1069	179-11-14	MSFC	UNIV ALA-HUNTSVILLE	1043
176-53-73	MSFC	GEORGIA INST OF TECH	1896	179-12-13	MSFC	RENSELAER POLY-NY	2865
176-61-11	ARC	SAN JOSE STATE UNIV	1290	179-12-13	MSFC	UNIV ALA-HUNTSVILLE	1060
176-81-71	MSFC	UNIV ALA-HUNTSVILLE	1061	179-12-14	MSFC	MASS INST OF TECH	2348
176-91-31	LARC	OLD DOMINION UNIV	3517	179-12-23	MSFC	UNIV OF SOUTHERN CAL	1647
176-91-31	LARC	UNIV MARYLAND-COL PK	2270	179-13-11	MSFC	CORNELL UNIVERSITY	2791
176-91-31	LARC	UNIV OF WYOMING	3716	179-13-11	MSFC	LEHIGH UNIVERSITY	3097
177-00-00	JSC	TEXAS A&M UNIVERSITY	3317	179-13-11	MSFC	UNIV OF ARIZONA	1115
177-00-00	JSC	UNIV OF HOUSTON	3346	179-13-11	MSFC	UNIV OF UTAH	3455
177-22-91	KSC	UNIV OF MIAMI	1866	179-14-20	MSFC	VANDERBILT UNIVERSTY	3235
177-32-61	WFC	PURDUE UNIVERSITY	2045	179-15-10	MSFC	COLORADO STATE UNIV	1667
177-32-71	MSFC	GEORGIA INST OF TECH	1899	179-25-12	MSFC	GEORGETOWN UNIV	1807
177-32-71	MSFC	MISSISSIPPI STATE U	2564	179-42-20	MSFC	MASS INST OF TECH	2352
177-32-81	JSC	OAKLAND UNIVERSITY	2460	179-42-20	MSFC	UNIV OF ARIZONA	1119
177-42-41	GSFC	PURDUE UNIVERSITY	2041	179-42-20	MSFC	UNIV ORGEON-HLTH CTR	3084
177-42-81	JSC	RICE UNIVERSITY	3276	179-42-20	MSFC	UNIV TENNESSEE-KNOXV	3211
177-42-81	JSC	TEXAS A&M UNIVERSITY	3319	179-53-99	MSFC	AUBURN UNIV-AUBURN	1020
177-42-81	JSC	UNIV OF HOUSTON	3335	180-06-50	GSFC	PRINCETON UNIVERSITY	2663
177-42-81	JSC	UNIV TEXAS-DALLAS	3413	180-32-51	LARC	NO CAROLINA STATE U	2949
177-42-83	JSC	PURDUE UNIVERSITY	2048	180-70-50	MSFC	UNIV MICH-ANN ARBOR	2478
177-44-82	JSC	UNIV OF KANSAS	2114	181-00-00	HQ	NO CAROLINA STATE U	2956
177-51-71	MSFC	GEORGIA INST OF TECH	1894	181-00-00	HQ	PENNSYLVANIA STATE U	3133
177-51-71	MSFC	NORTH GEORGIA COL	1930	181-00-00	HQ	U MINN-MNPLS-ST PAUL	2546
177-51-81	JSC	UNIV CALIF-BERKELEY	1423	183-00-00	HQ	GEORGE WASHINGTON U	1791
177-51-81	JSC	UNIV OF KANSAS	2120	183-00-00	HQ	MASS INST OF TECH	2361
177-51-82	JSC	KANSAS STATE UNIV	2102	183-00-00	HQ	NORTHWESTERN UNIV	1962
177-51-83	JSC	TEXAS A&M UNIVERSITY	3311	183-00-00	HQ	NORTHWESTERN UNIV	1963
177-51-84	JSC	TEXAS A&M UNIVERSITY	3310	183-00-00	HQ	UNIV OF HOUSTON	3353
177-51-84	JSC	UNIV ARKANSAS-FAYETV	1176	183-00-00	HQ	UNIV OF PENNSYLVANIA	3144
177-51-84	JSC	UNIV OF KANSAS	2119	183-00-00	HQ	UNIV TEXAS-DALLAS	3414
177-51-91	KSC	UNIV OF FLORIDA	1845	183-00-00	HQ	UNIV WISC-MADISON	3686
177-51-91	KSC	UNIV OF FLORIDA	1846	185-00-00	HQ	CALIF INST OF TECH	1221
177-52-41	GSFC	UNIV MARYLAND-COL PK	2259	185-00-00	HQ	HARVARD UNIVERSITY	2314

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RTOP NO.	INSTALLATION	INSTITUTION	ACC NO.	RTOP NO.	INSTALLATION	INSTITUTION	ACC NO.
185-00-00	HQ	MASS INST OF TECH	2360	185-50-60	ARC	IOWA STATE UNIV	208
185-00-00	HQ	NORTHWESTERN UNIV	1960	185-50-60	ARC	UNIV CALIF-DAVIS	147
185-00-00	HQ	STANFORD UNIVERSITY	1350	185-50-61	ARC	IOWA STATE UNIV	207
185-00-00	HQ	UNIV OF HAWAII	1952	185-50-81	HQ	CALIF INST OF TECH	121
185-00-00	HQ	UNIV TEXAS-AUSTIN	3381	185-50-81	HQ	CALIF INST OF TECH	122
185-00-00	HQ	UNIV OF WASHINGTON	3644	185-50-81	HQ	CALIF INST OF TECH	122
185-00-00	HQ	VIRGINIA POLY INST	3599	185-50-81	HQ	HARVARD UNIVERSITY	231
185-47-32	JSC	RICE UNIVERSITY	3284	185-50-81	HQ	STANFORD UNIVERSITY	137
185-47-32	JSC	UNIV MICH-ANN ARBOR	2510	185-50-81	HQ	STATE UNIV NY-BUFFAL	289
185-47-32	JSC	UNIV TEXAS-AUSTIN	3373	185-50-81	HQ	UNIV OF ARIZONA	115
185-47-51	GSFC	UNIV MARYLAND-COL PK	2239	185-50-81	HQ	UNIV CALIF-L ANGELES	155
185-47-52	GSFC	UNIV MICH-ANN ARBOR	2464	185-50-81	HQ	UNIV CALIF-SAN DIEGO	159
185-47-52	GSFC	UNIV MICH-ANN ARBOR	2472	185-50-81	HQ	UNIV CALIF-S BARBARA	160
185-47-54	GSFC	UNIV MICH-ANN ARBOR	2471	185-50-81	HQ	UNIV OF CHICAGO	199
185-47-55	GSFC	CATHOLIC UNIVERSITY	1775	185-50-81	HQ	UNIV OF SO CAROLINA	319
185-47-57	GSFC	UNIV COLORADO-BOLDR	1699	185-50-81	HQ	UNIV OF VIRGINIA	357
185-47-67	ARC	STANFORD UNIVERSITY	1341	185-50-81	HQ	VIRGINIA POLY INST	362
185-47-67	ARC	UNIV OF ARIZONA	1123	186-00-00	GSFC	SOUTHEASTN MASS UNIV	243
185-47-67	ARC	UNIV OF ARIZONA	1127	186-00-00	HQ	CORNELL UNIVERSITY	279
185-47-67	ARC	UNIV OF SANTA CLARA	1630	186-68-55	HQ	CORNELL UNIVERSITY	279
185-47-68	ARC	UNIV OF KANSAS	2108	186-68-55	HQ	CORNELL UNIVERSITY	279
185-47-69	ARC	SAN FRAN STATE UNIV	1279	186-68-55	HQ	RENSSELAER POLY-NY	287
185-47-80	HQ	STANFORD UNIVERSITY	1346	186-68-63	ARC	UNIV COLORADO-BOLDR	169
185-47-80	HQ	UNIV OF ARIZONA	1135	186-68-63	ARC	U MINN-MNPLS-ST PAUL	252
185-47-80	HQ	U MINN-MNPLS-ST PAUL	2534	186-68-63	ARC	UNIV WISC-MADISON	366
185-47-81	HQ	CALIF INST OF TECH	1237	186-68-63	ARC	RICE UNIVERSITY	327
185-47-81	HQ	CORNELL UNIVERSITY	2800	186-68-63	GSFC	UNIV MICH-ANN ARBOR	246
185-47-81	HQ	CORNELL UNIVERSITY	2802	186-68-63	GSFC	UNIV MICH-ANN ARBOR	247
185-47-81	HQ	GEORGIA INST OF TECH	1902	186-68-63	GSFC	RENSSELAER POLY-NY	287
185-47-81	HQ	HARVARD UNIVERSITY	2310	186-68-65	ARC	STANFORD UNIVERSITY	139
185-47-81	HQ	HARVARD UNIVERSITY	2317	188-00-00	GSFC	NEW YORK INST TECH	283
185-47-81	HQ	MASS INST OF TECH	2368	188-00-00	GSFC	UNIV OF ARIZONA	114
185-47-81	HQ	POLY INST OF NY	2856	188-00-00	GSFC	UNIV CALIF-DAVIS	148
185-47-81	HQ	RICE UNIVERSITY	3289	188-00-00	GSFC	UNIV OF DENVER	173
185-47-81	HQ	TEXAS A&M UNIVERSITY	3323	188-00-00	GSFC	UNIV MARYLAND-COL PK	223
185-47-81	HQ	UNIV OF CHICAGO	1994	188-00-00	GSFC	UNIV OF ROCHESTER	292
185-47-81	HQ	UNIV OF FLORIDA	1848	188-00-00	MSFC	CASE WESTERN RESERVE	297
185-47-81	HQ	UNIV MICH-ANN ARBOR	2486	188-00-00	HQ	CALIF INST OF TECH	119
185-47-81	HQ	UNIV OF SOUTHERN CAL	1653	188-00-00	HQ	CALIF INST OF TECH	124
185-47-81	HQ	UNIV TEXAS-DALLAS	3415	188-00-00	HQ	CORNELL UNIVERSITY	281
185-47-81	HQ	UNIV OF WASHINGTON	3656	188-00-00	HQ	FEDERAL CITY COLLEGE	178
185-47-83	HQ	HARVARD UNIVERSITY	2327	188-00-00	HQ	NEW MEX ST U-LAS CR	270
185-47-83	HQ	KANSAS STATE UNIV	2105	188-00-00	HQ	PRINCETON UNIVERSITY	268
185-47-83	HQ	STATE U NY-STONY BRK	2900	188-00-00	HQ	PRINCETON UNIVERSITY	268
185-47-83	HQ	UNIV CALIF-BERKELEY	1438	188-00-00	HQ	STATE U NY-STONY BRK	289
185-47-83	HQ	UNIV COLORADO-BOLDR	1703	188-00-00	HQ	UNIV OF ARIZONA	112
185-47-83	HQ	UNIV OF SOUTHERN CAL	1654	188-00-00	HQ	UNIV OF ARIZONA	114
185-47-83	HQ	UNIV TENNESSEE-KNOXV	3219	188-00-00	HQ	UNIV CALIF-BERKELEY	144
185-47-85	HQ	RENSSELAER POLY-NY	2869	188-00-00	HQ	UNIV CALIF-L ANGELES	151
185-47-85	HQ	UNIV NEBRASKA-LINCLN	2618	188-00-00	HQ	UNIV OF CHICAGO	198
185-47-85	HQ	UNIV OF PITTSBURGH	3153	188-00-00	HQ	UNIV COLORADO-BOLDR	170
185-47-85	HQ	UNIV OF PITTSBURGH	3154	188-00-00	HQ	UNIV OF HAWAII	194
185-47-85	HQ	UNIV OF PITTSBURGH	3159	188-00-00	HQ	UNIV MICH-ANN ARBOR	249
185-47-85	HQ	UNIV OF SO CAROLINA	3190	188-00-00	HQ	U MINN-MNPLS-ST PAUL	255
185-47-85	HQ	YALE UNIVERSITY	1752	188-00-00	HQ	WASHINGTON UNIVERSTY	260
185-47-91	LARC	OLD DOMINION UNIV	3526	188-00-00	HQ	WASHINGTON UNIVERSTY	260
185-47-91	LARC	UNIV CALIF-L ANGELES	1538	188-36-55	GSFC	UNIV MARYLAND-COL PK	224
185-47-91	LARC	UNIV OF VIRGINIA	3561	188-36-55	HQ	CORNELL UNIVERSITY	282
185-50-40	MSFC	UNIV ALA-HUNTSVILLE	1063	188-36-55	HQ	JOHNS HOPKINS UNIV	220

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188-36-55	HQ	JOHNS HOPKINS UNIV	2214	188-38-53	HQ	UNIV TEXAS-AUSTIN	3394
188-36-55	HQ	MASS INST OF TECH	2359	188-38-64	HQ	CALIF INST OF TECH	1230
188-36-55	HQ	RICE UNIVERSITY	3280	188-38-64	HQ	COLUMBIA UNIVERSITY	2782
188-36-55	HQ	UNIV OF ARIZONA	1142	188-38-64	HQ	HARVARD UNIVERSITY	2326
188-36-55	HQ	UNIV CALIF-BERKELEY	1435	188-41-51	MSFC	UNIV ALA-TUSCALOOSA	1083
188-36-55	HQ	UNIV CALIF-L ANGELES	1513	188-41-51	HQ	BOWLING GRN STATE U	2972
188-36-55	HQ	UNIV CALIF-L ANGELES	1517	188-41-51	HQ	CALIF INST OF TECH	1201
188-36-55	HQ	UNIV CALIF-L ANGELES	1525	188-41-51	HQ	INDIANA U-BLOOMINGTN	2032
188-36-55	HQ	UNIV CALIF-L ANGELES	1549	188-41-51	HQ	NEW YORK UNIVERSITY	2843
188-36-55	HQ	UNIV CALIF-SAN DIEGO	1564	188-41-51	HQ	NORTHWESTERN UNIV	1961
188-36-55	HQ	UNIV CALIF-SAN DIEGO	1577	188-41-51	HQ	PRINCETON UNIVERSITY	2657
188-36-55	HQ	UNIV CALIF-SAN DIEGO	1589	188-41-51	HQ	PRINCETON UNIVERSITY	2662
188-36-55	HQ	UNIV CALIF-SAN DIEGO	1596	188-41-51	HQ	PURDUE UNIVERSITY	2050
188-36-55	HQ	UNIV OF IOWA	2100	188-41-51	HQ	UNIV OF ARIZONA	1134
188-36-55	HQ	UNIV MARYLAND-COL PK	2232	188-41-51	HQ	UNIV OF ARIZONA	1136
188-36-55	HQ	U MINN-MNPLS-ST PAUL	2533	188-41-51	HQ	UNIV ARKANSAS-FAYETV	1178
188-36-55	HQ	U MINN-MNPLS-ST PAUL	2549	188-41-51	HQ	UNIV CALIF-BERKELEY	1462
188-36-55	HQ	U MINN-MNPLS-ST PAUL	2550	188-41-51	HQ	UNIV CALIF-BERKELEY	1472
188-36-55	HQ	UNIV OF WASHINGTON	3652	188-41-51	HQ	UNIV CALIF-SAN DIEGO	1563
188-36-55	HQ	UNIV WISC-MADISON	3692	188-41-51	HQ	UNIV OF CHICAGO	1992
188-36-56	HQ	CORNELL UNIVERSITY	2824	188-41-51	HQ	UNIV MARYLAND-COL PK	2238
188-36-56	HQ	PENNSYLVANIA STATE U	3118	188-41-51	HQ	UNIV MARYLAND-COL PK	2247
188-36-56	HQ	PENNSYLVANIA STATE U	3119	188-41-51	HQ	UNIV OF VIRGINIA	3568
188-36-56	HQ	POLY INST OF NY	2855	188-41-51	HQ	UNIV ILLINOIS-URBANA	2024
188-36-56	HQ	UNIV CALIF-SAN DIEGO	1575	188-41-52	HQ	UNIV ILLINOIS-URBANA	2024
188-36-56	HQ	UNIV CALIF-SAN DIEGO	1576	188-41-54	MSFC	MASS INST OF TECH	2346
188-36-56	HQ	UNIV CALIF-SAN DIEGO	1576	188-41-54	MSFC	STANFORD UNIVERSITY	1360
188-36-56	HQ	UNIV OF IOWA	2101	188-41-54	MSFC	UNIV ALA-HUNTSVILLE	1048
188-36-56	HQ	UNIV MICH-ANN ARBOR	2488	188-41-54	MSFC	CALIF INST OF TECH	1216
188-36-56	HQ	UNIV TEXAS-DALLAS	3417	188-41-54	HQ	MASS INST OF TECH	2431
188-36-56	HQ	YALE UNIVERSITY	1755	188-41-54	HQ	MONTANA STATE UNIV	2611
188-36-57	HQ	STANFORD UNIVERSITY	1345	188-41-54	HQ	UNIV MARYLAND-BALT	2219
188-36-57	HQ	STANFORD UNIVERSITY	1349	188-41-54	HQ	UNIV CALIF-SAN DIEGO	1572
188-38-01	HQ	STATE U NY-STONY BRK	2912	188-41-55	ARC	HOUSTON BAPTIST UNIV	3259
188-38-51	GSFC	STATE U NY-STONY BRK	2909	188-41-55	JSC	LEHIGH UNIVERSITY	3103
188-38-51	HQ	CALIF INST OF TECH	1213	188-41-55	JSC	CALIF INST OF TECH	1207
188-38-52	GSFC	UNIV OF NEW MEXICO	2721	188-41-55	HQ	COLUMBIA UNIVERSITY	2783
188-38-52	GSFC	UNIV OF NEW MEXICO	2722	188-41-55	HQ	CORNELL UNIVERSITY	2811
188-38-52	GSFC	WASHINGTON TECH INST	1825	188-41-55	HQ	HARVARD UNIVERSITY	2319
188-38-52	HQ	CALIF INST OF TECH	1198	188-41-55	HQ	MASS INST OF TECH	2380
188-38-52	HQ	HARVARD UNIVERSITY	2316	188-41-55	HQ	STANFORD UNIVERSITY	1367
188-38-52	HQ	STANFORD UNIVERSITY	1369	188-41-55	HQ	UNIV OF ARIZONA	1146
188-38-52	HQ	UNIV OF HAWAII	1945	188-41-55	HQ	UNIV OF ARIZONA	1152
188-38-52	HQ	UNIV OF MASS-AMHERST	2445	188-41-55	HQ	UNIV CALIF-S CRUZ	1612
188-38-52	HQ	UNIV OF MASS-AMHERST	2447	188-41-55	HQ	STANFORD UNIVERSITY	1377
188-38-52	HQ	UNIV MICH-ANN ARBOR	2483	188-41-59	HQ	LA STATE U-SHREVEPT	2169
188-38-53	GSFC	CATHOLIC UNIVERSITY	1777	188-41-64	JSC	STATE UNIV NY-ALBANY	2883
188-38-53	GSFC	UNIV OF ARIZONA	1129	188-45-51	GSFC	UNIV MARYLAND-COL PK	2222
188-38-53	GSFC	UNIV OF ARIZONA	1130	188-45-51	GSFC	MASS INST OF TECH	2383
188-38-53	GSFC	UNIV MARYLAND-COL PK	2233	188-45-51	HQ	STATE UNIV NY-ALBANY	2885
188-38-53	GSFC	UNIV NEBRASKA-LINCLN	2615	188-45-51	HQ	UNIV OF ARIZONA	1137
188-38-53	HQ	BRANDEIS UNIVERSITY	2298	188-45-51	HQ	UNIV CALIF-SAN DIEGO	1579
188-38-53	HQ	HARVARD UNIVERSITY	2307	188-45-51	HQ	UNIV MARYLAND-COL PK	2235
188-38-53	HQ	HARVARD UNIVERSITY	2325	188-45-51	HQ	UNIV OF NEW MEXICO	2731
188-38-53	HQ	STANFORD UNIVERSITY	1353	188-45-51	HQ	UNIV CALIF-L ANGELES	1514
188-38-53	HQ	UNIV CALIF-SAN DIEGO	1586	188-45-52	HQ	UNIV MICH-ANN ARBOR	2495
188-38-53	HQ	UNIV COLORADO-BOLDR	1704	188-45-52	HQ	FEDERAL CITY COLLEGE	1780
188-38-53	HQ	UNIV MARYLAND-COL PK	2236	188-45-53	GSFC	SAN DIEGO STATE UNIV	1270
188-38-53	HQ	UNIV NEW HAMPSHIRE	2636	188-45-53	GSFC	UNIV OF WASHINGTON	3643
188-38-53	HQ	UNIV TENNESSEE-KNOXV	3231	188-46-56	HQ	CALIF INST OF TECH	1214

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188-46-56	HQ	LA STATE U-BAT ROUGE	2168	189-00-00	HQ	U MINN-MNPLS-ST PAUL	2535
188-46-56	HQ	UNIV OF ARIZONA	1141	190-00-00	HQ	UNIV CALIF-L ANGELES	1512
188-46-56	HQ	UNIV OF ARIZONA	1171	192-00-00	HQ	UNIV OF WASHINGTON	3647
188-46-56	HQ	UNIV CALIF-BERKELEY	1458	192-55-61	ARC	CAL STATE U-L ANGLES	1254
188-46-56	HQ	UNIV CALIF-BERKELEY	1459	192-55-61	ARC	SAN FRAN STATE UNIV	1272
188-46-56	HQ	UNIV CALIF-RIVERSIDE	1553	192-55-61	ARC	SAN FRAN STATE UNIV	1278
188-46-56	HQ	UNIV OF CHICAGO	1981	192-55-61	ARC	STANFORD UNIVERSITY	1362
188-46-56	HQ	UNIV OF CHICAGO	1982	192-55-61	HQ	CAL STATE U-FULLERTN	1252
188-46-56	HQ	UNIV OF CHICAGO	1983	192-55-61	HQ	CORNELL UNIVERSITY	2804
188-46-56	HQ	UNIV MARYLAND-COL PK	2237	192-55-61	HQ	MASS INST OF TECH	2374
188-46-56	HQ	UNIV MARYLAND-COL PK	2241	192-55-61	HQ	POLY INST OF NY	2857
188-46-56	HQ	U MINN-MNPLS-ST PAUL	2538	192-55-61	HQ	RENSSELAER POLY-NY	2871
188-46-56	HQ	UNIV NEW HAMPSHIRE	2638	192-55-61	HQ	STANFORD UNIVERSITY	1357
188-46-56	HQ	UNIV OF WYOMING	3713	192-55-61	HQ	STATE UNIV NY-BUFFAL	2892
188-46-56	HQ	WASHINGTON UNIVERSTY	2604	192-55-61	HQ	STATE U NY-STONY BRK	2906
188-46-57	GSFC	CATHOLIC UNIVERSITY	1773	192-55-61	HQ	TEXAS A&M UNIVERSITY	3327
188-46-57	GSFC	UNIV MICH-ANN ARBOR	2475	192-55-61	HQ	UNIV ALA-BIRMINGHAM	1039
188-46-57	HQ	CORNELL UNIVERSITY	2808	192-55-61	HQ	UNIV CALIF-BERKELEY	1452
188-46-57	HQ	RICE UNIVERSITY	3286	192-55-61	HQ	UNIV CALIF-SAN DIEGO	1585
188-46-57	HQ	STANFORD UNIVERSITY	1365	192-55-61	HQ	UNIV OF HAWAII	1949
188-46-57	HQ	UNIV CALIF-SAN DIEGO	1562	192-55-61	HQ	UNIV OF HOUSTON	3357
188-46-57	HQ	UNIV NEW HAMPSHIRE	2637	192-55-61	HQ	UNIV ILLINOIS-URBANA	2025
188-46-59	HQ	HARVARD UNIVERSITY	2320	192-55-61	HQ	UNIV MARYLAND-COL PK	2250
188-46-59	HQ	UNIV COLORADO-BOLDR	1727	192-55-61	HQ	UNIV MARYLAND-COL PK	2263
188-46-64	GSFC	LA STATE U-BAT ROUGE	2162	192-55-61	HQ	UNIV OF MIAMI	1867
188-46-64	JSC	UNIV OF HOUSTON	3339	192-55-61	HQ	UNIV OF MIAMI	1868
188-48-52	GSFC	UNIV CALIF-RIVERSIDE	1552	192-55-61	HQ	U MINN-MNPLS-ST PAUL	2545
188-48-52	GSFC	UNIV OF NEW MEXICO	2724	192-55-61	HQ	UNIV OF SO CAROLINA	3191
188-48-52	GSFC	UNIV OF PITTSBURGH	3155	192-55-61	HQ	UNIV OF SO CAROLINA	3193
188-78-56	GSFC	CALIF INST OF TECH	1187	192-55-61	HQ	UNIV OF VERMONT	3476
188-78-56	GSFC	PRINCETON UNIVERSITY	2650	192-55-62	ARC	CAL STATE U-HAYWARD	1265
188-78-56	GSFC	PRINCETON UNIVERSITY	2651	192-55-62	ARC	SAN JOSE STATE UNIV	1280
188-78-56	GSFC	PRINCETON UNIVERSITY	2652	192-55-62	ARC	STANFORD UNIVERSITY	1328
188-78-56	GSFC	PRINCETON UNIVERSITY	2654	192-55-62	ARC	UNIV MO-KANSAS CITY	2590
188-78-56	GSFC	PRINCETON UNIVERSITY	2667	192-55-62	ARC	UNIV OF SANTA CLARA	1627
188-78-56	GSFC	UNIV OF ARIZONA	1153	192-55-62	HQ	BOSTON UNIVERSITY	2293
188-78-56	GSFC	UNIV OF ARIZONA	1160	192-55-62	HQ	CALIF INST OF TECH	1225
188-78-56	GSFC	UNIV OF VIRGINIA	3563	192-55-62	HQ	HARVARD UNIVERSITY	2308
188-78-56	GSFC	YALE UNIVERSITY	1749	192-55-62	HQ	INDIANA U-BLOOMINGTN	2037
188-78-56	HQ	UNIV CALIF-SAN DIEGO	1581	192-55-62	HQ	UNIV OF ARIZONA	1143
188-78-57	MSFC	UNIV OF ARIZONA	1114	192-55-62	HQ	UNIV CALIF-BERKELEY	1434
188-78-57	MSFC	UNIV CALIF-L ANGELES	1501	192-55-62	HQ	UNIV CALIF-L ANGELES	1524
188-78-57	MSFC	UNIV OF SANTA CLARA	1623	192-55-62	HQ	UNIV CALIF-L ANGELES	1536
188-78-58	GSFC	BELOIT COLLEGE	3664	192-55-62	HQ	UNIV CALIF-S BARBARA	1607
188-78-58	GSFC	UNIV OF ARIZONA	1150	192-55-62	HQ	UNIV OF CHICAGO	1995
188-78-58	GSFC	UNIV CALIF-SAN DIEGO	1587	192-55-62	HQ	UNIV OF HOUSTON	3356
188-78-58	GSFC	UNIV OF CHICAGO	1979	192-55-62	HQ	UNIV TEXAS-AUSTIN	3391
188-78-58	GSFC	UNIV TEXAS-AUSTIN	3395	192-55-62	HQ	UTAH STATE UNIV	3474
188-78-58	GSFC	UNIV TEXAS-AUSTIN	3396	192-55-62	HQ	CORNELL UNIVERSITY	2806
188-78-58	GSFC	UNIV TEXAS-AUSTIN	3397	192-55-63	HQ	FLORIDA STATE UNIV	1836
188-78-58	GSFC	UNIV OF VIRGINIA	3576	192-55-63	HQ	MASS INST OF TECH	2372
188-78-58	GSFC	UNIV WISC-MADISON	3697	192-55-63	HQ	PENNSYLVANIA STATE U	3128
188-78-60	GSFC	STANFORD UNIVERSITY	1314	192-55-63	HQ	STANFORD UNIVERSITY	1359
189-00-00	HQ	CATHOLIC UNIVERSITY	1770	192-55-63	HQ	UNIV OF ROCHESTER	2923
189-00-00	HQ	EMORY UNIVERSITY	1878	192-55-63	HQ	YALE UNIVERSITY	1754
189-00-00	HQ	INDIANA U-BLOOMINGTN	2035	192-55-64	ARC	CALIF INST OF TECH	1224
189-00-00	HQ	UNIV CALIF-L ANGELES	1523	192-55-64	ARC	CAL STATE U-FULLERTN	1248
189-00-00	HQ	UNIV CALIF-SAN DIEGO	1578	192-55-64	ARC	CAL STATE U-FULLERTN	1249
189-00-00	HQ	UNIV OF KENTUCKY	2144	192-55-64	ARC	SAN FRAN STATE UNIV	1277

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192-55-64	ARC	SAN JOSE STATE UNIV	1289	195-42-66	HQ	UNIV MARYLAND-COL PK	2283
192-55-64	ARC	UNIV MARYLAND-COL PK	2226	195-42-67	HQ	LEHIGH UNIVERSITY	3101
192-55-64	ARC	UNIV MARYLAND-COL PK	2227	195-42-67	HQ	TEXAS A&M UNIVERSITY	3324
192-55-64	ARC	UNIV OF SANTA CLARA	1632	195-42-67	HQ	UNIV CALIF-SAN DIEGO	1566
192-55-64	HQ	CALIF INST OF TECH	1212	195-42-67	HQ	UNIV OF HOUSTON	3361
192-55-64	HQ	GEORGIA INST OF TECH	1922	195-42-67	HQ	UNIV MICH-ANN ARBOR	2494
192-55-64	HQ	RENSSELAER POLY-NY	2878	195-42-67	HQ	UNIV OF NEW MEXICO	2728
192-55-64	HQ	SO ILL UNIV-CARBONDL	1973	195-42-67	HQ	UNIV OF PITTSBURGH	3161
192-55-64	HQ	UNIV CALIF-SAN DIEGO	1584	195-42-67	HQ	UNIV OF VIRGINIA	3572
192-55-64	HQ	UNIV OF HAWAII	1946	195-42-67	HQ	PENNSYLVANIA STATE U	3121
192-55-64	HQ	UTAH STATE UNIV	3471	195-42-68	HQ	UNIV CALIF-L ANGELES	1515
193-58-62	HQ	HARDIN-SIMMONS UNIV	3258	195-42-68	HQ	UNIV OREGON-EUGENE	3080
193-58-62	HQ	NO DAKOTA STATE UNIV	2970	195-43-50	HQ	UNIV OF HAWAII	1943
193-58-63	HQ	GEORGE WASHINGTON U	1790	195-43-50	HQ	UNIV MARYLAND-COL PK	2242
195-00-00	GSFC	HOWARD UNIVERSITY	1808	195-43-51	HQ	UNIV OF HAWAII	1950
195-00-00	HQ	COLLEGE VIRGIN ISLND	3717	196-00-00	HQ	BRIGHAM YOUNG UNIV	3446
195-00-00	HQ	ILL INST OF TECH	1956	196-00-00	HQ	UNIV OF MASS-AMHERST	2444
195-00-00	HQ	UNIV CALIF-BERKELEY	1446	196-41-50	GSFC	UNIV OF ARIZONA	1131
195-00-00	HQ	UNIV CALIF-DAVIS	1485	196-41-52	GSFC	JOHNS HOPKINS UNIV	2212
195-00-00	HQ	UNIV MARYLAND-COL PK	2246	196-41-52	GSFC	NEW MEX INST MINING	2696
195-00-00	HQ	YALE UNIVERSITY	1753	196-41-52	GSFC	NEW MEX INST MINING	2697
195-20-01	HQ	MASS INST OF TECH	2402	196-41-52	GSFC	UNIV OF NEW MEXICO	2719
195-20-01	HQ	MASS INST OF TECH	2433	196-41-52	GSFC	HOWARD UNIVERSITY	1811
195-20-02	HQ	CALIF INST OF TECH	1199	196-41-53	GSFC	STATE U NY-STONY BRK	2908
195-20-02	HQ	CORNELL UNIVERSITY	2805	196-41-53	GSFC	UNIV OF ARIZONA	1157
195-20-02	HQ	MASS INST OF TECH	2365	196-41-53	GSFC	UNIV OF ARIZONA	1158
195-20-02	HQ	MASS INST OF TECH	2429	196-41-53	GSFC	UNIV OF DENVER	1739
195-20-02	HQ	UNIV CALIF-L ANGELES	1511	196-41-53	GSFC	UNIV WISC-MADISON	3698
195-20-02	HQ	UNIV CALIF-SAN DIEGO	1565	196-41-53	GSFC	UNIV OF ARIZONA	1128
195-20-02	HQ	UNIV CALIF-SAN DIEGO	1567	196-41-67	ARC	CALIF INST OF TECH	1196
195-20-03	HQ	CALIF INST OF TECH	1200	196-41-80	HQ	CALIF INST OF TECH	1203
195-20-03	HQ	PENNSYLVANIA STATE U	3141	196-41-80	HQ	CALIF INST OF TECH	1215
195-20-03	HQ	SAN DIEGO STATE UNIV	1271	196-41-80	HQ	CORNELL UNIVERSITY	2818
195-20-03	HQ	STANFORD UNIVERSITY	1406	196-41-80	HQ	CORNELL UNIVERSITY	2825
195-20-03	HQ	UNIV OF PENNSYLVANIA	3147	196-41-80	HQ	MASS INST OF TECH	2379
195-20-04	HQ	ARIZONA STATE UNIV	1097	196-41-80	HQ	NEW MEX ST U-LAS CR	2707
195-20-04	HQ	OREGON STATE UNIV	3075	196-41-80	HQ	STATE U NY-STONY BRK	2901
195-20-04	HQ	PURDUE UNIVERSITY	2051	196-41-80	HQ	UNIV OF ARIZONA	1132
195-20-04	HQ	UNIV OF ARIZONA	1155	196-41-80	HQ	UNIV OF ARIZONA	1138
195-20-04	HQ	UNIV CALIF-SAN DIEGO	1600	196-41-80	HQ	UNIV OF ARIZONA	1145
195-20-04	HQ	UNIV CALIF-S BARBARA	1610	196-41-80	HQ	UNIV OF ARIZONA	1149
195-20-04	HQ	UNIV OF CHICAGO	1984	196-41-80	HQ	UNIV OF ARIZONA	1170
195-20-04	HQ	UNIV OF CHICAGO	1999	196-41-80	HQ	UNIV OF ARIZONA	1172
195-20-04	HQ	YALE UNIVERSITY	1758	196-41-80	HQ	UNIV CALIF-BERKELEY	1451
195-20-05	HQ	UNIV CALIF-L ANGELES	1550	196-41-80	HQ	UNIV OF HAWAII	1947
195-20-06	HQ	CALIF INST OF TECH	1234	196-41-80	HQ	UNIV TEXAS-AUSTIN	3384
195-20-06	HQ	UNIV CALIF-SAN DIEGO	1573	196-41-80	HQ	UNIV TEXAS-AUSTIN	3400
195-21-02	ARC	OHIO STATE UNIV	3016	196-41-80	HQ	UNIV OF WASHINGTON	3649
195-21-02	ARC	UNIV OF SANTA CLARA	1624	196-41-80	HQ	CALIF INST OF TECH	1210
195-21-04	ARC	CAL ST COL-SONOMA	1243	196-41-82	HQ	CALIF INST OF TECH	1239
195-21-04	ARC	SAN JOSE STATE UNIV	1287	196-41-82	HQ	MASS INST OF TECH	2387
195-21-04	ARC	SAN JOSE STATE UNIV	1294	196-41-82	HQ	UNIV ILLINOIS-URBANA	2010
195-22-03	GSFC	UNIV MARYLAND-COL PK	2255	196-41-82	HQ	UNIV MARYLAND-COL PK	2240
195-22-06	GSFC	CORNELL UNIVERSITY	2822	196-41-82	HQ	UNIV TEXAS-AUSTIN	3380
195-25-99	JSC	BRIGHAM YOUNG UNIV	3444	196-41-82	HQ	UNIV TEXAS-AUSTIN	3382
195-42-64	HQ	UNIV OF NEW MEXICO	2725	196-41-84	HQ	FLORIDA STATE UNIV	1837
195-42-65	HQ	FAIRLEIGH-DICKNSON U	2641	196-41-84	HQ	PRINCETON UNIVERSITY	2668
195-42-65	HQ	UNIV OF PITTSBURGH	3156	196-41-84	HQ	PRINCETON UNIVERSITY	2684
195-42-66	HQ	CORNELL UNIVERSITY	2796	196-41-85	HQ	UNIV OF ARIZONA	1169

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RTOP NO.	INSTAL-LATION	INSTITUTION	ACC NO.	RTOP NO.	INSTAL-LATION	INSTITUTION	ACC NO.
196-41-85	HQ	UNIV OF CINCINNATI	3035	340-00-00	JSC	SO UNIV-BATON ROUGE	2176
310-00-00	GSFC	TEXAS A&M UNIVERSITY	3296	340-00-00	JSC	SO UNIV-BATON ROUGE	2177
310-10-22	GSFC	UNIV OF CINCINNATI	3033	340-00-00	JSC	TEXAS SOUTHERN UNIV	3328
310-10-22	GSFC	UNIV TENNESSEE-KNOXV	3230	340-00-00	JSC	U ARKANSAS-PINE BLUF	1182
310-10-22	GSFC	UNIV TEXAS-AUSTIN	3366	340-00-00	KSC	BETHUNE-COOKMAN COL	1827
310-10-22	GSFC	UNIV TEXAS-AUSTIN	3398	340-00-00	KSC	FLORIDA A&M UNIV	1828
310-20-31	GSFC	GEORGIA INST OF TECH	1887	340-00-00	KSC	FLORIDA A&M UNIV	1829
310-20-32	GSFC	UNIV OF MASS-AMHERST	2443	340-00-00	KSC	KENTUCKY STATE UNIV	2139
310-40-25	GSFC	TEXAS A&M UNIVERSITY	3297	340-00-00	KSC	NM HIGHLANDS UNIV	2694
310-40-39	GSFC	UNIV CALIF-SAN DIEGO	1591	340-00-00	KSC	SAVANNAH STATE COL	1932
310-40-41	GSFC	DARTMOUTH COLLEGE	2629	340-00-00	KSC	SOUTHEASTN STATE COL	3064
310-40-41	GSFC	NEW YORK UNIVERSITY	2848	340-00-00	KSC	BENNETT COLLEGE-NC	2930
311-07-13	GSFC	UNIV OF IOWA	2097	340-00-00	LARC	ELIZABETH CITY ST U	2938
311-20-10	GSFC	UNIV OF CHILE	3723	340-00-00	LARC	HAMPTON INSTITUTE	3496
311-20-20	GSFC	NEW MEX ST U-LAS CR	2701	340-00-00	LARC	HAMPTON INSTITUTE	3497
311-20-20	GSFC	UNIV MO-COLUMBIA	2584	340-00-00	LARC	HAMPTON INSTITUTE	3498
311-80-41	GSFC	UNIV TEXAS-AUSTIN	3393	340-00-00	LARC	HAMPTON INSTITUTE	3499
311-80-63	GSFC	UNIV TENNESSEE-KNOXV	3224	340-00-00	LARC	HOWARD UNIVERSITY	1819
311-90-53	GSFC	CLEMSON UNIV-CLEMSON	3184	340-00-00	LARC	HOWARD UNIVERSITY	1820
311-90-53	GSFC	UNIV OF NOTRE DAME	2072	340-00-00	LARC	NORFOLK STATE COL	3502
312-04-01	HQ	UNIV OF PERU	3729	340-00-00	LARC	NORFOLK STATE COL	3504
312-20-30	GSFC	UNIV MARYLAND-COL PK	2281	340-00-00	LARC	NORFOLK STATE COL	3505
320-00-00	LARC	OLD DOMINION UNIV	3506	340-00-00	LARC	NO CAR A&T STATE U	2940
323-50-09	ARC	SAN JOSE STATE UNIV	1292	340-00-00	LARC	NO CAR A&T STATE U	2943
340-00-00	ARC	CENTRAL ST UNIV-OHIO	2996	340-00-00	LARC	SHAW UNIVERSITY	2967
340-00-00	ARC	CLARK COLLEGE	1876	340-00-00	LARC	VIRGINIA STATE COL	3628
340-00-00	ARC	FLORIDA A&M UNIV	1831	340-00-00	LARC	VIRGINIA STATE COL	3630
340-00-00	ARC	SO UNIV-BATON ROUGE	2173	340-00-00	LARC	VIRGINIA STATE COL	3631
340-00-00	ARC	TALLADEGA COLLEGE	1033	340-00-00	LARC	CHICAGO STATE UNIV	1954
340-00-00	ARC	XAVIER UNIV-LA	2189	340-00-00	LERC	CENTRAL ST UNIV-OHIO	2994
340-00-00	GSFC	ALCORN STATE UNIV	2553	340-00-00	LERC	CENTRAL ST UNIV-OHIO	2995
340-00-00	GSFC	BOWIE STATE COLLEGE	2190	340-00-00	LERC	JACKSON STATE UNIV	2557
340-00-00	GSFC	BOWIE STATE COLLEGE	2191	340-00-00	LERC	TENNESSEE STATE UNIV	3202
340-00-00	GSFC	BOWIE STATE COLLEGE	2192	340-00-00	LERC	TENNESSEE STATE UNIV	3203
340-00-00	GSFC	BOWIE STATE COLLEGE	2195	340-00-00	LERC	WILBERFORCE UNIV	3053
340-00-00	GSFC	COPPIN STATE COLLEGE	2197	340-00-00	LERC	ALABAMA A&M UNIV	1003
340-00-00	GSFC	COPPIN STATE COLLEGE	2198	340-00-00	MSFC	ALABAMA A&M UNIV	1005
340-00-00	GSFC	DC TEACHERS COLLEGE	1779	340-00-00	MSFC	ALABAMA A&M UNIV	1006
340-00-00	GSFC	DELAWARE STATE COL	1761	340-00-00	MSFC	ALABAMA A&M UNIV	1007
340-00-00	GSFC	DELAWARE STATE COL	1762	340-00-00	MSFC	ALABAMA A&M UNIV	1008
340-00-00	GSFC	FEDERAL CITY COLLEGE	1783	340-00-00	MSFC	ALABAMA A&M UNIV	1009
340-00-00	GSFC	FEDERAL CITY COLLEGE	1784	340-00-00	MSFC	ALBORN STATE UNIV	2554
340-00-00	GSFC	FEDERAL CITY COLLEGE	1785	340-00-00	MSFC	ATLANTA UNIVERSITY	1875
340-00-00	GSFC	FEDERAL CITY COLLEGE	1786	340-00-00	MSFC	BENEDICT COLLEGE	3180
340-00-00	GSFC	HOWARD UNIVERSITY	1814	340-00-00	MSFC	DILLARD UNIVERSITY	2156
340-00-00	GSFC	HOWARD UNIVERSITY	1815	340-00-00	MSFC	FISK UNIVERSITY	3197
340-00-00	GSFC	HOWARD UNIVERSITY	1816	340-00-00	MSFC	FISK UNIVERSITY	3198
340-00-00	GSFC	HOWARD UNIVERSITY	1821	340-00-00	MSFC	GRAMBLING STATE UNIV	2160
340-00-00	GSFC	HOWARD UNIVERSITY	1822	340-00-00	MSFC	JACKSON STATE UNIV	2556
340-00-00	GSFC	MORGAN STATE COLLEGE	2217	340-00-00	MSFC	JACKSON STATE UNIV	2558
340-00-00	GSFC	UNIV MD-EASTRN SHORE	2286	340-00-00	MSFC	JACKSON STATE UNIV	2559
340-00-00	GSFC	WASHINGTON TECH INST	1824	340-00-00	MSFC	JACKSON STATE UNIV	2560
340-00-00	GSFC	WASHINGTON TECH INST	1826	340-00-00	MSFC	KENTUCKY STATE UNIV	2140
340-00-00	JSC	GRAMBLING STATE UNIV	2161	340-00-00	MSFC	MISS VALLEY ST UNIV	2575
340-00-00	JSC	HOWARD UNIVERSITY	1823	340-00-00	MSFC	MOREHOUSE COLLEGE	1924
340-00-00	JSC	JACKSON STATE UNIV	2561	340-00-00	MSFC	MOREHOUSE COLLEGE	1927
340-00-00	JSC	PAN AMERICAN UNIV	3264	340-00-00	MSFC	MOREHOUSE COLLEGE	1928
340-00-00	JSC	PRAIRIE VIEW A&M U	3267	340-00-00	MSFC	MORRIS BROWN COLLEGE	1929
340-00-00	JSC	PRAIRIE VIEW A&M U	3268	340-00-00	MSFC	OAKWOOD COLLEGE	1031

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340-00-00	MSFC	PAINE COLLEGE	1931	340-00-00	HQ	UNIV CALIF-BERKELEY	1439
340-00-00	MSFC	SO CAROLINA ST COL	3187	340-00-00	HQ	UNIV CALIF-BERKELEY	1442
340-00-00	MSFC	SO UNIV-BATON ROUGE	2174	340-00-00	HQ	UNIV OF CHICAGO	1989
340-00-00	MSFC	SO UNIV-BATON ROUGE	2175	340-00-00	HQ	UNIV COLORADO-BOLDR	1706
340-00-00	MSFC	TALLADEGA COLLEGE	1032	340-00-00	HQ	UNIV OF HAWAII	1944
340-00-00	MSFC	TALLADEGA COLLEGE	1034	340-00-00	HQ	UNIV OF HOUSTON	3362
340-00-00	MSFC	TENNESSEE STATE UNIV	3205	340-00-00	HQ	UNIV OF HOUSTON	3363
340-00-00	MSFC	TUSKEGEE INSTITUTE	1036	340-00-00	HQ	UNIV OF KANSAS	2121
340-00-00	MSFC	TUSKEGEE INSTITUTE	1038	340-00-00	HQ	UNIV MARYLAND-COL PK	2267
340-00-00	WFC	DC TEACHERS COLLEGE	1778	340-00-00	HQ	UNIV MD-EASTRN SHORE	2287
340-00-00	WFC	HAMPTON INSTITUTE	3495	340-00-00	HQ	U MINN-MNPLS-ST PAUL	2537
340-00-00	WFC	UNIV MD-EASTRN SHORE	2288	340-00-00	HQ	UNIV NEBRASKA-LINCLN	2617
340-00-00	HQ	ALABAMA A&M UNIV	1002	340-00-00	HQ	UNIV OF NEW MEXICO	2726
340-00-00	HQ	ALABAMA A&M UNIV	1004	340-00-00	HQ	UNIV SO MISSISSIPPI	2577
340-00-00	HQ	AUBURN UNIV-AUBURN	1028	340-00-00	HQ	UNIV TEXAS-DALLAS	3416
340-00-00	HQ	AUBURN UNIV-AUBURN	1029	340-00-00	HQ	UNIV TEX-PUB HEALTH	3441
340-00-00	HQ	BISHOP COLLEGE	3257	340-00-00	HQ	UNIV WISC-MADISON	3690
340-00-00	HQ	BOWIE STATE COLLEGE	2193	340-00-00	HQ	VIRGINIA COMNWLTH U	3586
340-00-00	HQ	CATHOLIC UNIVERSITY	1776	340-00-00	HQ	WASHINGTON UNIVERSTY	2601
340-00-00	HQ	COLLEGE OF WM & MARY	3482	340-00-00	HQ	XAVIER UNIV-LA	2188
340-00-00	HQ	COLUMBIA UNIVERSITY	2769	340-00-00	HQ	UNIV OREGON-EUGENE	3081
340-00-00	HQ	CORNELL UNIVERSITY	2801	352-00-00	ARC	UNIV OF WYOMING	3714
340-00-00	HQ	DELAWARE STATE COL	1759	352-00-00	ARC	U MINN-MNPLS-ST PAUL	2551
340-00-00	HQ	DILLARD UNIVERSITY	2155	352-00-00	HQ	CORNELL UNIVERSITY	2809
340-00-00	HQ	FLORIDA A&M UNIV	1830	352-02-01	ARC	CORNELL UNIVERSITY	2814
340-00-00	HQ	GRAMBLING STATE UNIV	2159	352-02-01	ARC	UNIV CALIF-BERKELEY	1447
340-00-00	HQ	HAMPTON INSTITUTE	3493	352-02-01	ARC	UNIV OF CHICAGO	1996
340-00-00	HQ	HOWARD UNIVERSITY	1810	352-02-01	ARC	UNIV TEXAS-AUSTIN	3392
340-00-00	HQ	HOWARD UNIVERSITY	1812	352-02-02	ARC	UNIV ALASKA-FAIRBNKS	1094
340-00-00	HQ	HOWARD UNIVERSITY	1813	352-02-02	ARC	UNIV ALASKA-FAIRBNKS	1095
340-00-00	HQ	HOWARD UNIVERSITY	1817	352-02-02	ARC	UNIV OF NEW MEXICO	2734
340-00-00	HQ	JACKSON STATE UNIV	2555	352-02-02	ARC	CALIF INST OF TECH	1217
340-00-00	HQ	LA STATE U-BAT ROUGE	2166	352-02-03	ARC	CORNELL UNIVERSITY	2787
340-00-00	HQ	LA STATE U-BAT ROUGE	2167	352-02-03	ARC	CORNELL UNIVERSITY	2803
340-00-00	HQ	MASS INST OF TECH	2370	352-02-03	ARC	JERSEY CITY ST COL	2644
340-00-00	HQ	MICHIGAN STATE UNIV	2456	352-02-03	ARC	MASS INST OF TECH	2389
340-00-00	HQ	MISSISSIPPI STATE U	2570	352-02-03	ARC	POMONA COLLEGE	1267
340-00-00	HQ	MISSISSIPPI STATE U	2571	352-02-03	ARC	STANFORD UNIVERSITY	1336
340-00-00	HQ	MOREHOUSE COLLEGE	1925	352-02-03	ARC	STATE U NY-STONY BRK	2905
340-00-00	HQ	MORGAN STATE COLLEGE	2218	352-02-03	ARC	UNIV OF ARIZONA	1126
340-00-00	HQ	NO CAR A&T STATE U	2939	352-02-03	ARC	UNIV OF ARIZONA	1148
340-00-00	HQ	NO CAR A&T STATE U	2941	352-02-03	ARC	UNIV OF ARIZONA	1156
340-00-00	HQ	OLD DOMINION UNIV	3513	352-02-03	ARC	UNIV OF ARIZONA	1159
340-00-00	HQ	OLD DOMINION UNIV	3523	352-02-03	ARC	UNIV CALIF-BERKELEY	1457
340-00-00	HQ	OLD DOMINION UNIV	3524	352-02-03	ARC	UNIV CALIF-SAN DIEGO	1574
340-00-00	HQ	OREGON STATE UNIV	3077	352-02-03	ARC	UNIV OF CHICAGO	1998
340-00-00	HQ	PAN AMERICAN UNIV	3262	352-02-03	ARC	UNIV OF CHICAGO	2001
340-00-00	HQ	PAN AMERICAN UNIV	3263	352-02-03	ARC	UNIV COLORADO-BOLDR	1726
340-00-00	HQ	PRAIRIE VIEW A&M U	3265	352-02-03	ARC	U MINN-MNPLS-ST PAUL	2544
340-00-00	HQ	PURDUE UNIVERSITY	2053	352-02-03	ARC	U MINN-MNPLS-ST PAUL	2547
340-00-00	HQ	SO DAKOTA STATE UNIV	3196	352-02-03	ARC	UNIV OF ROCHESTER	2924
340-00-00	HQ	SO UNIV-BATON ROUGE	2171	352-02-03	ARC	UNIV OF ARIZONA	1117
340-00-00	HQ	SO UNIV-NEW ORLEANS	2178	352-02-03	MSFC	UNIV OF ARIZONA	1118
340-00-00	HQ	STANFORD UNIVERSITY	1384	355-00-00	GSFC	VIRGINIA POLY INST	3601
340-00-00	HQ	TEXAS A&M UNIVERSITY	3321	356-36-03	JSC	UNIV ALASKA-FAIRBNKS	1091
340-00-00	HQ	UNIV ALA-HUNTSVILLE	1070	356-36-03	MSFC	JOHNS HOPKINS UNIV	2204
340-00-00	HQ	UNIV ALA-TUSCALOOSA	1084	356-36-03	MSFC	UNIV CALIF-BERKELEY	1417
340-00-00	HQ	UNIV ALASKA-FAIRBNKS	1092	356-36-03	MSFC	UNIV MICH-ANN ARBOR	2479
340-00-00	HQ	UNIV OF ARIZONA	1140	356-36-03	MSFC	U MINN-MNPLS-ST PAUL	2531

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356-36-04	MSFC	UNIV ALA-HUNTSVILLE	1056	383-20-04	HQ	CITY U N Y-GRAD SCHL	2753
356-38-01	GSFC	HARVARD UNIVERSITY	2303	383-20-04	HQ	STATE U NY-STONY BRK	2913
356-38-01	GSFC	UNIV CALIF-SAN DIEGO	1558	383-20-04	HQ	UNIV CALIF-SAN DIEGO	1597
356-41-01	GSFC	PRINCETON UNIVERSITY	2653	383-20-04	HQ	UNIV MARYLAND-COL PK	2284
356-41-01	GSFC	UNIV OF VIRGINIA	3565	383-24-03	LARC	OLD DOMINION UNIV	3551
356-41-01	GSFC	UNIV WISC-MADISON	3678	383-25-03	ARC	BRIGHAM YOUNG UNIV	3447
356-48-00	GSFC	UNIV NEW HAMPSHIRE	2633	383-25-03	JSC	RICE UNIVERSITY	3273
356-64-38	GSFC	CALIF INST OF TECH	1189	383-25-03	JSC	UNIV TEXAS-DALLAS	3412
356-64-41	GSFC	UNIV WISC-MADISON	3674	383-30-01	JSC	UNIV OF UTAH	3456
356-64-46	GSFC	UNIV OF CHICAGO	1978	383-30-02	JSC	ST U NY COL-GENESE0	2917
357-38-02	MSFC	HARVARD UNIVERSITY	2305	383-30-02	JSC	U ARKANSAS-MONTICELLO	1180
357-38-03	MSFC	HARVARD UNIVERSITY	2300	383-30-02	JSC	UNIV CALIF-L ANGELES	1504
357-48-04	MSFC	UNIV TEXAS-AUSTIN	3371	383-30-02	JSC	WOODSHOLE OCEAN INST	2451
357-48-05	MSFC	STATE UNIV NY-ALBANY	2882	383-30-02	JSC	WOODSHOLE OCEAN INST	2452
366-00-00	ARC	UNIV OF HAWAII	1938	383-30-02	JSC	UNIV OF SANTA CLARA	1640
366-00-00	ARC	UNIV OF HAWAII	1939	383-31-00	ARC	COLUMBIA UNIVERSITY	2764
369-02-01	HQ	UNIV CALIF-L ANGELES	1548	383-31-00	JSC	MASS INST OF TECH	2353
369-02-04	GSFC	FLORIDA INST OF TECH	1834	383-31-00	JSC	STANFORD UNIVERSITY	1318
369-04-06	HQ	OHIO STATE UNIV	3015	383-31-00	JSC	UNIV MARYLAND-COL PK	2225
369-07-01	WFC	COLUMBIA UNIVERSITY	2760	383-31-00	JSC	UNIV TEXAS-AUSTIN	3377
369-07-01	WFC	COLUMBIA UNIVERSITY	2761	383-31-00	JSC	UNIV TEXAS-AUSTIN	3379
369-07-01	WFC	OHIO STATE UNIV	3006	383-31-00	JSC	UNIV TEXAS-AUSTIN	3379
369-07-01	WFC	UNIV CALIF-L ANGELES	1499	383-31-00	JSC	UNIV TEXAS-GALVESTON	3432
369-07-01	WFC	UNIV CALIF-SAN DIEGO	1559	384-00-00	HQ	U ARKANSAS-MONTICELLO	1181
369-07-01	WFC	UNIV TEXAS-AUSTIN	3368	384-00-00	HQ	UNIV OF MASS-AMHERST	2448
383-00-00	JSC	TEXAS A&M UNIVERSITY	3312	384-00-00	HQ	UNIV OF PITTSBURGH	3160
383-00-00	JSC	UNIV OF WASHINGTON	3636	384-47-51	GSFC	UNIV MARYLAND-COL PK	2223
383-00-00	HQ	BOSTON UNIVERSITY	2294	384-47-51	GSFC	UNIV TENNESSEE-KNOXV	3210
383-00-00	HQ	PRINCETON UNIVERSITY	2665	384-47-66	ARC	SAN FRAN STATE UNIV	1276
383-00-00	HQ	PRINCETON UNIVERSITY	2671	384-47-81	HQ	CALIF INST OF TECH	1235
383-09-50	HQ	UNIV OF IDAHO	1953	384-47-81	HQ	CALIF INST OF TECH	1236
383-09-52	ARC	IOWA STATE UNIV	2075	384-47-81	HQ	MASS INST OF TECH	2405
383-09-57	HQ	UNIV CALIF-L ANGELES	1531	384-47-81	HQ	NEW MEX ST U-LAS CR	2710
383-09-61	GSFC	DUKE UNIVERSITY	2934	384-47-81	HQ	ST LOUIS UNIVERSITY	2581
383-20-01	HQ	BROWN UNIVERSITY	3169	384-47-81	HQ	UNIV OF ARIZONA	1173
383-20-01	HQ	MASS INST OF TECH	2430	384-47-81	HQ	UNIV CALIF-L ANGELES	1540
383-20-01	HQ	UNIV OF SANTA CLARA	1641	384-47-81	HQ	UNIV COLORADO-BOLDR	1708
383-20-01	HQ	UNIV OF UTAH	3467	384-47-81	HQ	UNIV COLORADO-BOLDR	1713
383-20-02	HQ	BROWN UNIVERSITY	3174	384-47-81	HQ	UNIV MICH-ANN ARBOR	2497
383-20-02	HQ	FAIRLEIGH-DICKNSON U	2643	384-47-81	HQ	UNIV OF WASHINGTON	3653
383-20-02	HQ	MASS INST OF TECH	2428	384-47-81	HQ	UNIV WISC-MADISON	3694
383-20-02	HQ	UNIV OF ARIZONA	1139	384-47-9X	LARC	STANFORD UNIVERSITY	1389
383-20-02	HQ	UNIV OF NEW MEXICO	2736	384-50-60	ARC	UNIV OF SANTA CLARA	1635
383-20-02	HQ	WASHINGTON UNIVERSTY	2609	384-50-80	HQ	BROWN UNIVERSITY	3172
383-20-03	HQ	CALIF INST OF TECH	1238	384-50-80	HQ	CALIF INST OF TECH	1223
383-20-03	HQ	CORNELL UNIVERSITY	2812	384-50-80	HQ	CORNELL UNIVERSITY	2819
383-20-03	HQ	MASS INST OF TECH	2427	384-50-80	HQ	HAMILTON COLLEGE	2827
383-20-03	HQ	MASS INST OF TECH	2432	384-50-80	HQ	NEW MEX ST U-LAS CR	2709
383-20-03	HQ	PRINCETON UNIVERSITY	2685	384-50-80	HQ	TULANE UNIVERSITY	2184
383-20-03	HQ	RICE UNIVERSITY	3287	384-50-80	HQ	UNIV CALIF-L ANGELES	1528
383-20-03	HQ	RICE UNIVERSITY	3288	384-50-80	HQ	UNIV COLORADO-BOLDR	1712
383-20-03	HQ	STANFORD UNIVERSITY	1401	384-50-80	HQ	UNIV OF GEORGIA	1937
383-20-03	HQ	UNIV OF ARIZONA	1166	384-50-80	HQ	UNIV OF HOUSTON	3358
383-20-03	HQ	UNIV OF ARIZONA	1167	384-50-80	HQ	UNIV OF KANSAS	2123
383-20-03	HQ	UNIV CALIF-BERKELEY	1471	384-50-80	HQ	UNIV OF MASS-AMHERST	2449
383-20-03	HQ	UNIV CALIF-L ANGELES	1534	384-50-80	HQ	UNIV MICH-ANN ARBOR	2498
383-20-03	HQ	UNIV TEXAS-DALLAS	3424	384-50-80	HQ	UNIV OF NEW MEXICO	2730
383-20-04	HQ	ARIZONA STATE UNIV	1100	384-50-80	HQ	UNIV OF SANTA CLARA	1638
383-20-04	HQ	CALIF INST OF TECH	1233	384-50-80	HQ	UNIV TEXAS-AUSTIN	3386
						UNIV OF UTAH	3463

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384-50-80	HQ	UNIV OF WASHINGTON	3651	385-41-00	HQ	CALIF INST OF TECH	1220
384-50-80	HQ	UNIV WISC-PARKSIDE	3706	385-41-00	HQ	CALIF INST OF TECH	1240
384-50-80	HQ	VIRGINIA STATE COL	3629	385-41-00	HQ	COLUMBIA UNIVERSITY	2775
384-50-80	HQ	WASHINGTON UNIVERSTY	2610	385-41-00	HQ	MASS INST OF TECH	2400
384-50-80	HQ	WEST TEXAS ST UNIV	3442	385-41-00	HQ	MASS INST OF TECH	2434
384-50-80	HQ	YALE UNIVERSITY	1757	385-41-00	HQ	NORTHWESTERN UNIV	1967
384-50-81	HQ	UNIV TEXAS-AUSTIN	3399	385-41-00	HQ	ST U NY COL-GENESE	2918
385-00-00	GSFC	UNIV OF CHICAGO	1975	385-41-00	HQ	UNIV COLORADO-BOLDR	1710
385-00-00	HQ	CAL STATE U-FULLERTN	1250	385-41-00	HQ	UNIV MICH-ANN ARBOR	2490
385-00-00	HQ	DARTMOUTH COLLEGE	2627	385-41-00	HQ	UNIV TEXAS-AUSTIN	3387
385-00-00	HQ	MASS INST OF TECH	2376	385-41-00	HQ	UNIV OF TOLEDO	3051
385-00-00	HQ	MASS INST OF TECH	2401	385-41-00	HQ	UNIV OF TOLEDO	3052
385-00-00	HQ	UNIV OF FLORIDA	1856	385-41-00	HQ	UNIV WISC-MADISON	3702
385-00-00	HQ	UNIV MARYLAND-COL PK	2257	385-41-00	HQ	UNIV WISC-MADISON	3703
385-36-00	GSFC	UNIV CALIF-L ANGELES	1496	385-41-00	HQ	UNIV WISC-MADISON	3704
385-36-00	MSFC	UNIV CALIF-SAN DIEGO	1561	385-45-00	ARC	BOSTON COLLEGE	2289
385-36-00	HQ	BRIGHAM YOUNG UNIV	3445	385-45-00	GSFC	U MINN-MNPLS-ST PAUL	2524
385-36-00	HQ	CATHOLIC UNIVERSITY	1771	385-45-00	HQ	NO CAROLINA STATE U	2955
385-36-00	HQ	DARTMOUTH COLLEGE	2628	385-45-00	HQ	RUTGERS UNIV-NEWARK	2692
385-36-00	HQ	DARTMOUTH COLLEGE	2630	385-45-00	HQ	UNIV MICH-ANN ARBOR	2509
385-36-00	HQ	GRAMBLING STATE UNIV	2157	385-45-00	HQ	UNIV TEXAS-DALLAS	3422
385-36-00	HQ	RICE UNIVERSITY	3282	385-45-00	HQ	UNIV OF TOLEDO	3046
385-36-00	HQ	STANFORD UNIVERSITY	1358	385-46-00	HQ	NEW YORK UNIVERSITY	2852
385-36-00	HQ	STANFORD UNIVERSITY	1363	385-46-00	HQ	STATE U NY-STONY BRK	2907
385-36-00	HQ	UNIV ALASKA-FAIRBNKS	1096	385-46-00	HQ	UNIV TEXAS-DALLAS	3421
385-36-00	HQ	UNIV OF ARIZONA	1168	387-30-01	HQ	UNIV CALIF-L ANGELES	1526
385-36-00	HQ	UNIV CALIF-BERKELEY	1455	387-30-01	HQ	UNIV TEXAS-AUSTIN	3385
385-36-00	HQ	UNIV COLORADO-BOLDR	1716	387-30-01	HQ	UNIV TEXAS-AUSTIN	3388
385-36-00	HQ	UNIV OF DENVER	1734	387-30-01	HQ	UNIV TEXAS-GALVESTON	3436
385-36-00	HQ	UNIV OF DENVER	1735	388-10-01	JSC	BRYN MAWR COLLEGE	3086
385-36-00	HQ	UNIV OF DENVER	1736	388-10-01	JSC	CALIF INST OF TECH	1209
385-36-00	HQ	UNIV MICH-ANN ARBOR	2485	388-10-01	JSC	CALIF INST OF TECH	1241
385-36-00	HQ	UNIV MICH-ANN ARBOR	2489	388-10-01	JSC	CASE WESTERN RESERVE	2977
385-36-00	HQ	UNIV OF NEW MEXICO	2732	388-10-01	JSC	COLUMBIA UNIVERSITY	2776
385-36-00	HQ	UNIV OF SOUTHERN CAL	1655	388-10-01	JSC	HARVARD UNIVERSITY	2311
385-36-00	HQ	UNIV OF SOUTHERN CAL	1656	388-10-01	JSC	LEHIGH UNIVERSITY	3102
385-36-00	HQ	UNIV TEXAS-DALLAS	3419	388-10-01	JSC	LEHIGH UNIVERSITY	3104
385-36-00	HQ	UNIV TEXAS-DALLAS	3423	388-10-01	JSC	MASS INST OF TECH	2382
385-36-00	HQ	UNIV TEXAS-DALLAS	3425	388-10-01	JSC	MASS INST OF TECH	2385
385-38-00	GSFC	NEW MEX INST MINING	2698	388-10-01	JSC	PRINCETON UNIVERSITY	2661
385-38-00	GSFC	UNIV OF NEW MEXICO	2720	388-10-01	JSC	PURDUE UNIVERSITY	2057
385-38-00	GSFC	UNIV OF NEW MEXICO	2723	388-10-01	JSC	RICE UNIVERSITY	3283
385-38-00	MSFC	UNIV ALA-HUNTSVILLE	1050	388-10-01	JSC	STATE U NY-STONY BRK	2897
385-38-00	MSFC	UNIV COLORADO-BOLDR	1701	388-10-01	JSC	UNIV OF ARIZONA	1155
385-38-00	HQ	CALIF INST OF TECH	1219	388-10-01	JSC	UNIV CALIF-SAN DIEGO	1571
385-38-00	HQ	COLUMBIA UNIVERSITY	2772	388-10-01	JSC	UNIV OF CHICAGO	1988
385-38-00	HQ	COLUMBIA UNIVERSITY	2773	388-10-01	JSC	UNIV OF HOUSTON	3355
385-38-00	HQ	COLUMBIA UNIVERSITY	2777	388-10-01	JSC	UNIV OF MASS-AMHERST	2446
385-38-00	HQ	SACRAMENTO CITY COL	1268	388-10-01	JSC	UNIV OF NEW MEXICO	2727
385-38-00	HQ	STANFORD UNIVERSITY	1381	388-10-01	JSC	UNIV OREGON-EUGENE	3079
385-38-00	HQ	STANFORD UNIVERSITY	1403	388-10-01	JSC	UNIV TEXAS-DALLAS	3418
385-38-00	HQ	STANFORD UNIVERSITY	1404	388-10-01	JSC	UNIV OF WASHINGTON	3650
385-38-00	HQ	UNIV ALA-HUNTSVILLE	1071	388-10-01	JSC	WASHINGTON UNIVERSTY	2603
385-38-00	HQ	UNIV CALIF-BERKELEY	1456	388-10-02	ARC	INDIANA U-BLOOMINGTN	2031
385-38-00	HQ	UNIV CALIF-SAN DIEGO	1598	388-10-02	JSC	BROWN UNIVERSITY	3175
385-38-00	HQ	UNIV COLORADO-BOLDR	1717	388-10-02	JSC	CALIF INST OF TECH	1204
385-38-00	HQ	UNIV COLORADO-BOLDR	1728	388-10-02	JSC	CALIF INST OF TECH	1205
385-38-00	HQ	UNIV MICH-ANN ARBOR	2508	388-10-02	JSC	CALIF INST OF TECH	1206
385-38-00	HQ	UNIV NEW HAMPSHIRE	2640	388-10-02	JSC	CALIF INST OF TECH	1228

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388-10-02	JSC	INDIANA U-BLOOMINGTN	2036	501-03-11	ARC	UTAH STATE UNIV	3472
388-10-02	JSC	OREGON STATE UNIV	3076	501-03-11	ARC	UTAH STATE UNIV	3473
388-10-02	JSC	RICE UNIVERSITY	3281	501-04-01	LARC	PENNSYLVANIA STATE U	3124
388-10-02	JSC	STATE U NY-STONY BRK	2898	501-04-01	LARC	PURDUE UNIVERSITY	2059
388-10-02	JSC	UNIV CALIF-BERKELEY	1440	501-04-01	LERC	GEORGIA INST OF TECH	1883
388-10-02	JSC	UNIV CALIF-BERKELEY	1448	501-04-01	LERC	GEORGIA INST OF TECH	1917
388-10-02	JSC	UNIV CALIF-L ANGELES	1520	501-04-01	LERC	PENNSYLVANIA STATE U	3110
388-10-02	JSC	UNIV CALIF-L ANGELES	1527	501-04-01	LERC	PURDUE UNIVERSITY	2039
388-10-02	JSC	UNIV CALIF-SAN DIEGO	1569	501-04-01	LERC	PURDUE UNIVERSITY	2062
388-10-02	JSC	UNIV CALIF-SAN DIEGO	1570	501-04-01	LERC	PURDUE UNIVERSITY	2062
388-10-02	JSC	UNIV OF CHICAGO	1986	501-04-01	LERC	UNIV OF SOUTHERN CAL	1657
388-10-02	JSC	UNIV OF CHICAGO	1987	501-04-03	LARC	GEORGIA INST OF TECH	1906
388-10-02	JSC	UNIV OF KENTUCKY	2146	501-04-03	LARC	GEORGIA INST OF TECH	1908
388-10-02	JSC	U MINN-MNPLS-ST PAUL	2536	501-04-03	LERC	CALIF INST OF TECH	1202
388-10-02	JSC	U MINN-MNPLS-ST PAUL	2541	501-06-01	ARC	SAN FRAN STATE UNIV	1275
388-10-02	JSC	UNIV TENNESSEE-KNOXV	3220	501-06-01	ARC	UNIV CALIF-L ANGELES	1507
388-10-03	JSC	COLUMBIA UNIVERSITY	2770	501-06-01	ARC	UNIV OF SOUTHERN CAL	1651
388-10-03	JSC	COLUMBIA UNIVERSITY	2771	501-06-01	LARC	GEORGIA INST OF TECH	1911
388-10-03	JSC	COLUMBIA UNIVERSITY	2784	501-06-05	LARC	TEXAS A&M UNIVERSITY	3325
388-10-03	JSC	CORNELL UNIVERSITY	2807	501-06-05	LARC	WICHITA STATE UNIV	2136
388-10-03	JSC	DUKE UNIVERSITY	2935	501-06-05	LARC	WICHITA STATE UNIV	2138
388-10-03	JSC	FAIRLEIGH-DICKNSON U	2642	501-06-09	ARC	IOWA STATE UNIV	2074
388-10-03	JSC	JOHNS HOPKINS UNIV	2215	501-06-11	LARC	PRINCETON UNIVERSITY	2658
388-10-03	JSC	MASS INST OF TECH	2381	501-08-10	FRC	MASS INST OF TECH	2369
388-10-03	JSC	QUEENS COLLEGE	2864	501-08-10	LARC	OLD DOMINION UNIV	3533
388-10-03	JSC	STATE UNIV NY-BUFFAL	2891	501-08-10	MSFC	GEORGIA INST OF TECH	1891
388-10-03	JSC	STATE U NY-STONY BRK	2914	501-09-02	HQ	UNIV ILLINOIS-URBANA	2006
388-10-03	JSC	UNIV CALIF-BERKELEY	1441	501-15-81	ARC	PURDUE UNIVERSITY	2060
388-10-03	JSC	UNIV CALIF-L ANGELES	1519	501-15-81	ARC	STANFORD UNIVERSITY	1379
388-10-03	JSC	UNIV CALIF-S BARBARA	1609	501-15-83	LERC	CARNEGIE-MELLON UNIV	3093
388-10-03	JSC	UNIV CALIF-S BARBARA	1611	501-15-83	LERC	CASE WESTERN RESERVE	2988
388-10-03	JSC	UNIV COLORADO-BOLDR	1711	501-15-83	LERC	GEORGIA INST OF TECH	1918
388-10-03	JSC	U MINN-MNPLS-ST PAUL	2542	501-15-83	LERC	IOWA STATE UNIV	2085
388-10-03	JSC	UNIV OF PITTSBURGH	3157	501-15-83	LERC	MASS INST OF TECH	2406
388-10-03	JSC	UNIV TEXAS-AUSTIN	3406	501-15-83	LERC	PENNSYLVANIA STATE U	3131
388-10-03	JSC	UNIV OF UTAH	3461	501-15-83	LERC	PENNSYLVANIA STATE U	3132
388-10-03	JSC	UNIV OF UTAH	3468	501-15-83	LERC	PENNSYLVANIA STATE U	3138
404-02-02	GSFC	STATE U NY-STONY BRK	2904	501-15-83	LERC	PENNSYLVANIA STATE U	3139
404-02-02	GSFC	STATE U NY-STONY BRK	2911	501-15-83	LERC	PRINCETON UNIVERSITY	2674
404-02-02	GSFC	YESHIVA UNIVERSITY	2928	501-15-83	LERC	UNIV OF CINCINNATI	3028
405-02-02	GSFC	CITY COLLEGE OF N Y	2747	501-15-83	LERC	UNIV MICH-ANN ARBOR	2499
405-02-02	GSFC	STATE U NY-STONY BRK	2896	501-15-83	LERC	UNIV OF NOTRE DAME	2069
408-00-00	GSFC	LONG ISLAND UNIV	2830	501-15-83	LERC	UNIV TENNESSEE-KNOXV	3222
408-02-02	GSFC	NEW YORK UNIVERSITY	2837	501-15-83	LERC	UNIV TENNESSEE-KNOXV	3223
490-02-01	HQ	UNIV OF ROME	3727	501-15-83	LERC	UNIV OF TOLEDO	3047
490-04-17	HQ	UNIV OF ROME	3728	501-17-00	ARC	UNIV OF CINCINNATI	3026
492-04-15	GSFC	VIRGINIA POLY INST	3608	501-21-20	HQ	GEORGE WASHINGTON U	1789
492-22-00	KSC	NEW MEX ST U-LAS CR	2705	501-21-21	ARC	LEHIGH UNIVERSITY	3098
492-22-00	KSC	NEW MEX ST U-LAS CR	2706	501-21-21	ARC	NO CAROLINA STATE U	2951
501-00-00	LARC	NEW YORK UNIVERSITY	2833	501-21-21	ARC	STANFORD UNIVERSITY	1376
501-00-00	LARC	OLD DOMINION UNIV	3528	501-21-21	LERC	UNIV COLORADO-BOLDR	1720
501-00-00	LARC	UNIV OF TORONTO	3720	501-21-22	ARC	CAL STATE U-CHICO	1244
501-00-00	LERC	UNIV OF SOUTHERN CAL	1644	501-21-22	ARC	POLY INST OF NY	2854
501-00-00	MSFC	TEXAS A&M UNIVERSITY	3303	501-21-22	ARC	POLY INST OF NY	2862
501-01-06	LERC	LEHIGH UNIVERSITY	3099	501-21-22	ARC	SAN JOSE STATE UNIV	1283
501-01-06	LERC	MASS INST OF TECH	2357	501-21-22	ARC	SAN JOSE STATE UNIV	1298
501-01-06	LERC	MASS INST OF TECH	2421	501-21-22	ARC	UNIV CALIF-BERKELEY	1465
501-01-06	LERC	UNIV OF KENTUCKY	2145	501-21-22	ARC	UNIV OF UTAH	3450
501-01-06	LERC	UNIV OF KENTUCKY	2151	501-21-22	LARC	OLD DOMINION UNIV	3510
501-01-06	LERC	UNIV OF KENTUCKY	2151	501-21-22	LARC	VIRGINIA POLY INST	3590

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501-21-23	LARC	PRINCETON UNIVERSITY	2666	502-04-25	LERC	GEORGIA INST OF TECH	1909
501-21-23	LERC	CASE WESTERN RESERVE	2980	502-04-35	LERC	UNIV MARYLAND-COL PK	2260
501-22-01	LARC	GEORGIA INST OF TECH	1904	502-04-36	LARC	NO CAROLINA STATE U	2957
501-22-03	LARC	VIRGINIA POLY INST	3609	502-04-41	LARC	NO CAROLINA STATE U	2944
501-22-04	LARC	CLEMSON UNIV-CLEMSON	3183	502-05-50	LERC	MASS INST OF TECH	2422
501-22-04	LARC	MASS INST OF TECH	2412	502-05-50	LERC	NO CAROLINA STATE U	2954
501-22-10	LARC	PRINCETON UNIVERSITY	2670	502-05-50	LERC	UNIV OF FLORIDA	1860
501-23-32	LARC	ISRAEL INST OF TECH	3725	502-05-50	LERC	WAYNE STATE UNIV	2514
501-23-32	LARC	UNIV OF KANSAS	2125	502-05-50	LERC	WAYNE STATE UNIV	2515
501-24-01	LERC	VIRGINIA POLY INST	3593	502-05-50	LERC	WAYNE STATE UNIV	2517
501-24-01	LERC	WICHITA STATE UNIV	2133	502-05-51	LERC	UNIV OF CONNECTICUT	1746
501-24-02	LERC	UNIV CALIF-BERKELEY	1469	502-05-51	LERC	UNIV OF PITTSBURGH	3165
501-24-03	LERC	UNIV OF CINCINNATI	3031	502-07-01	ARC	STANFORD UNIVERSITY	1325
501-24-07	LERC	BUCKNELL UNIVERSITY	3087	502-07-01	ARC	STANFORD UNIVERSITY	1342
501-24-07	LERC	STANFORD UNIVERSITY	1348	502-10-01	ARC	STANFORD UNIVERSITY	1393
501-24-08	LERC	PURDUE UNIVERSITY	2058	502-10-01	LARC	MASS INST OF TECH	2411
501-24-10	LERC	CAL STATE U-NRTHRDGE	1255	502-10-01	LARC	NO CAROLINA STATE U	2958
501-24-10	LERC	CLEVELAND STATE UNIV	2997	502-10-01	LARC	OLD DOMINION UNIV	3525
501-24-10	LERC	NORTHWESTERN UNIV	1965	502-10-01	LARC	OLD DOMINION UNIV	3529
501-24-10	LERC	UNIV OF VIRGINIA	3567	502-10-01	HQ	ILL INST OF TECH	1958
501-24-11	HQ	CASE WESTERN RESERVE	2985	502-10-01	HQ	STANFORD UNIVERSITY	1402
501-26-01	FRC	UNIV CALIF-L ANGELES	1545	502-10-02	LERC	UNIV CALIF-SAN DIEGO	1593
501-26-04	ARC	IOWA STATE UNIV	2084	502-10-02	LERC	UNIV OF CINCINNATI	3029
501-29-12	LARC	OLD DOMINION UNIV	3521	502-11-01	LERC	WAYNE STATE UNIV	2518
501-33-00	FRC	UNIV OF KANSAS	2132	502-12-01	HQ	ARIZONA STATE UNIV	1099
501-38-11	LARC	CHRISTPHR NEWPRT COL	3477	502-12-02	LARC	UNIV ILLINOIS-URBANA	2019
501-97-01	ARC	SAN JOSE STATE UNIV	1286	502-12-11	HQ	STATE UNIV NY-BUFFAL	2894
501-97-01	LARC	NORFOLK STATE COL	3503	502-21-20	LERC	UNIV OF PITTSBURGH	3163
502-00-00	HQ	ALFRED UNIVERSITY	2737	502-21-27	MSFC	AUBURN UNIV-AUBURN	1016
502-01-01	ARC	UNIV CALIF-BERKELEY	1427	502-21-28	MSFC	ATHENS COLLEGE	1012
502-01-01	ARC	UNIV CALIF-L ANGELES	1543	502-21-28	MSFC	ATHENS COLLEGE	1013
502-01-01	HQ	PRINCETON UNIVERSITY	2676	502-21-29	LARC	NEW MEX ST U-LAS CR	2699
502-01-02	LERC	CASE WESTERN RESERVE	2987	502-21-32	LARC	OLD DOMINION UNIV	3519
502-01-02	LERC	NORTHWESTERN UNIV	1964	502-22-01	LARC	UNIV CALIF-L ANGELES	1532
502-01-02	LERC	NORTHWESTERN UNIV	1968	502-22-03	LERC	BROWN UNIVERSITY	3171
502-01-02	HQ	STANFORD UNIVERSITY	1351	502-22-03	LERC	COLORADO STATE UNIV	1673
502-01-02	HQ	TULANE UNIVERSITY	2182	502-22-03	LERC	LEHIGH UNIVERSITY	3105
502-01-03	LARC	AMERICAN UNIVERSITY	1769	502-22-09	LERC	PRINCETON UNIVERSITY	2669
502-01-03	LARC	BROWN UNIVERSITY	3173	502-22-10	LARC	UNIV OF CINCINNATI	3032
502-01-03	LARC	OLD DOMINION UNIV	3515	502-22-10	LARC	UNIV OF MIAMI	1872
502-01-03	MSFC	MASS INST OF TECH	2364	502-22-11	ARC	UNIV MARYLAND-COL PK	2253
502-01-06	LERC	STANFORD UNIVERSITY	1378	502-22-11	LARC	OHIO STATE UNIV	3014
502-01-06	LERC	UNIV MARYLAND-COL PK	2274	502-23-32	GSFC	UNIV CALIF-SAN DIEGO	1592
502-01-07	LERC	HIRAM COLLEGE	3000	502-23-32	GSFC	UNIV TENNESSEE-KNOXV	3229
502-03-11	GSFC	MASS INST OF TECH	2396	502-23-32	GSFC	YALE UNIVERSITY	1750
502-03-11	GSFC	UNIV OF ARIZONA	1161	502-23-51	MSFC	AUBURN UNIV-AUBURN	1023
502-03-11	GSFC	YALE UNIVERSITY	1751	502-23-51	MSFC	MISSISSIPPI STATE U	2562
502-03-31	HQ	CALIF INST OF TECH	1229	502-23-51	MSFC	UNIV OF SO FLORIDA	1873
502-03-32	HQ	UNIV MARYLAND-COL PK	2243	502-23-51	MSFC	VANDERBILT UNIVERSTY	3234
502-03-51	LARC	COLLEGE OF WM & MARY	3486	502-23-52	MSFC	TEXAS A&M UNIVERSITY	3301
502-03-52	LARC	UNIV OF VIRGINIA	3581	502-23-54	GSFC	UNIV OF ARIZONA	1163
502-03-53	LARC	UNIV COLORADO-BOLDR	1721	502-23-56	LARC	UNIV COLORADO-BOLDR	1714
502-03-53	LARC	UNIV COLORADO-BOLDR	1722	502-23-56	LARC	WASHINGTON UNIVERSTY	2606
502-03-53	LARC	UNIV OKLAHOMA-NORMAN	3070	502-24-16	LERC	GEORGIA INST OF TECH	1884
502-04-01	LERC	COLORADO STATE UNIV	1681	502-24-41	LARC	UNIV OF DENVER	1729
502-04-01	LERC	COLORADO STATE UNIV	1687	502-24-88	LARC	UNIV MARYLAND-COL PK	2268
502-04-25	LERC	CATHOLIC UNIVERSITY	1774	502-25-53	LERC	UNIV OF FLORIDA	1857
502-04-25	LERC	COLORADO STATE UNIV	1675	502-25-71	LERC	UNIV OF CINCINNATI	3038
502-04-25	LERC	GEORGIA INST OF TECH	1903	502-25-71	LERC	UNIV OF CINCINNATI	3039

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502-27-01	ARC	BROWN UNIVERSITY	3170	504-09-42	ARC	UNIV CALIF-BERKELEY	1431
502-27-01	LARC	OLD DOMINION UNIV	3535	504-29-03	ARC	UNIV CALIF-L ANGELES	1508
502-28-04	LERC	UNIV ILLINOIS-URBANA	2020	504-29-03	ARC	UNIV CALIF-SAN DIEGO	1582
502-28-04	LERC	UNIV OF KENTUCKY	2148	504-29-21	FRC	UNIV OF VIRGINIA	3575
502-28-04	LERC	UNIV MARYLAND-COL PK	2251	504-39-11	LARC	CASE WESTERN RESERVE	2986
502-28-04	LERC	UNIV MICH-ANN ARBOR	2493	505-00-00	FRC	UNIV OF KANSAS	2109
502-31-51	LERC	UNIV TENNESSEE-KNOXV	3221	505-01-11	LERC	CASE WESTERN RESERVE	2976
502-32-01	LARC	CALIF INST OF TECH	1231	505-01-11	LERC	COLUMBIA UNIVERSITY	2781
502-32-01	LARC	OLD DOMINION UNIV	3532	505-01-11	LERC	MASS INST OF TECH	2424
502-32-01	LARC	OLD DOMINION UNIV	3545	505-01-11	LERC	PENNSYLVANIA STATE U	3137
502-32-02	LARC	POLY INST OF NY	2859	505-01-11	LERC	STATE U NY-STONY BRK	2902
502-32-02	LARC	UNIV TENNESSEE-KNOXV	3225	505-01-21	ARC	CORNELL UNIVERSITY	2820
502-32-02	LARC	UNIV TEXAS-AUSTIN	3402	505-01-21	ARC	UNIV CALIF-S BARBARA	1606
502-32-02	LARC	UNIV OF VIRGINIA	3570	505-01-21	ARC	VIRGINIA POLY INST	3626
502-37-01	ARC	IOWA STATE UNIV	2082	505-01-21	LERC	CARNEGIE-MELLON UNIV	3092
502-37-01	ARC	UNIV OF SANTA CLARA	1625	505-01-21	LERC	CASE WESTERN RESERVE	2993
502-37-01	LARC	NEW YORK UNIVERSITY	2842	505-01-21	LERC	PENNSYLVANIA STATE U	3126
502-37-01	LARC	NO CAROLINA STATE U	2963	505-01-21	LERC	SYRACUSE UNIVERSITY	2919
502-37-01	LARC	UNIV OF CINCINNATI	3034	505-01-21	LERC	UNIV OF MIAMI	1871
502-37-01	LARC	UNIV OF CINCINNATI	3037	505-01-21	LERC	CLARKSON COL OF TECH	2754
502-37-02	ARC	IOWA STATE UNIV	2077	505-01-31	ARC	SAN JOSE STATE UNIV	1281
502-37-02	ARC	IOWA STATE UNIV	2079	505-01-31	ARC	SAN JOSE STATE UNIV	1288
502-37-02	ARC	STANFORD UNIVERSITY	1370	505-01-31	ARC	SAN JOSE STATE UNIV	1299
502-37-02	LARC	VIRGINIA POLY INST	3605	505-01-32	ARC	UNIV CALIF-BERKELEY	1408
502-37-02	LARC	VIRGINIA POLY INST	3624	505-01-32	ARC	UNIV CALIF-BERKELEY	1468
503-04-01	HQ	UNIV OF ARIZONA	1133	505-01-34	LARC	COLLEGE OF WM & MARY	3487
503-10-01	LARC	PRINCETON UNIVERSITY	2677	505-01-34	LARC	UNIV SO MISSISSIPPI	2578
503-10-01	HQ	GEORGIA INST OF TECH	1921	505-01-34	LARC	VIRGINIA COMNWLTH U	3588
503-10-01	HQ	UNIV OF FLORIDA	1852	505-01-34	LARC	VIRGINIA POLY INST	3613
503-10-03	LARC	GEORGIA INST OF TECH	1913	505-01-34	LARC	VIRGINIA POLY INST	3615
503-10-03	LERC	KENT STATE UNIV	3001	505-01-34	LARC	VIRGINIA POLY INST	3620
503-10-03	LERC	UNIV OF CINCINNATI	3027	505-02-13	LARC	ST LOUIS UNIVERSITY	2579
503-10-03	HQ	NO CAROLINA STATE U	2952	505-02-13	LARC	VIRGINIA POLY INST	3606
503-10-03	HQ	UNIV ILLINOIS-URBANA	2013	505-02-21	ARC	PRINCETON UNIVERSITY	2664
503-10-03	HQ	UNIV MARYLAND-COL PK	2261	505-02-21	ARC	SAN JOSE STATE UNIV	1293
504-09-11	LARC	COLUMBIA UNIVERSITY	2755	505-02-21	ARC	VIRGINIA POLY INST	3625
504-09-11	LARC	COLUMBIA UNIVERSITY	2779	505-02-21	LARC	COLUMBIA UNIVERSITY	2778
504-09-11	LARC	COLUMBIA UNIVERSITY	2780	505-02-21	LARC	PRINCETON UNIVERSITY	2659
504-09-11	LARC	GEORGE WASHINGTON U	1793	505-02-21	LARC	STANFORD UNIVERSITY	1352
504-09-11	LARC	GEORGE WASHINGTON U	1796	505-02-21	LARC	UNIV CALIF-L ANGELES	1535
504-09-11	LARC	MEMPHIS ST UNIV	3201	505-02-23	FRC	UNIV OF KANSAS	2131
504-09-11	LARC	NO CAROLINA STATE U	2948	505-02-31	LARC	CLEMSON UNIV-CLEMSON	3185
504-09-11	LARC	OLD DOMINION UNIV	3539	505-02-31	LARC	GEORGIA INST OF TECH	1907
504-09-11	LARC	UNIV OF CONNECTICUT	1747	505-02-31	LARC	LEHIGH UNIVERSITY	3100
504-09-11	LARC	UNIV OF UTAH	3466	505-02-31	LARC	LEHIGH UNIVERSITY	3106
504-09-12	ARC	SOUTHERN METHODIST U	3293	505-02-31	LARC	MICHIGAN STATE UNIV	2459
504-09-12	ARC	UNIV CALIF-BERKELEY	1454	505-02-31	LARC	OLD DOMINION UNIV	3540
504-09-21	LARC	OLD DOMINION UNIV	3531	505-02-31	LARC	UNIV MICH-ANN ARBOR	2492
504-09-21	LARC	UNIV OF VIRGINIA	3577	505-02-31	LARC	UNIV TENNESSEE-KNOXV	3227
504-09-21	LARC	UNIV OF VIRGINIA	3585	505-02-31	LARC	VIRGINIA POLY INST	3612
504-09-33	ARC	MASS INST OF TECH	2394	505-02-31	LARC	VIRGINIA POLY INST	3616
504-09-33	ARC	SAN JOSE STATE UNIV	1300	505-02-41	LARC	OLD DOMINION UNIV	3553
504-09-33	ARC	TUFTS UNIVERSITY	2437	505-02-41	LARC	UNIV OF KANSAS	2124
504-09-33	ARC	TUFTS UNIVERSITY	2438	505-02-41	LARC	WASHINGTON UNIVERSTY	2608
504-09-33	ARC	UNIV CALIF-BERKELEY	1429	505-02-42	LARC	ISRAEL INST OF TECH	3726
504-09-33	ARC	UNIV OF UTAH	3464	505-02-42	LARC	MASS INST OF TECH	2399
504-09-41	LARC	MASS INST OF TECH	2388	505-02-51	LARC	GEORGE WASHINGTON U	1795
504-09-41	LARC	UNIV OF VIRGINIA	3584	505-02-51	LARC	UNIV OF BRIDGEPORT	1743
504-09-42	ARC	CAL STATE U-CHICO	1245	505-03-11	LERC	PENNSYLVANIA STATE U	3136

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505-03-12	LARC	BROWN UNIVERSITY	3176	505-06-42	LARC	UNIV OF VIRGINIA	3580
505-03-12	LARC	FLORIDA STATE UNIV	1838	505-06-43	LARC	POLY INST OF NY	2861
505-03-12	LARC	GEORGIA INST OF TECH	1912	505-06-81	ARC	IOWA STATE UNIV	2076
505-03-12	LARC	MICHIGAN STATE UNIV	2457	505-06-81	ARC	UNIV OF FLORIDA	1847
505-03-12	LARC	NEW YORK UNIVERSITY	2841	505-06-91	FRC	STANFORD UNIVERSITY	1398
505-03-12	LARC	OLD DOMINION UNIV	3550	505-06-91	FRC	UNIV CALIF-L ANGELES	1521
505-03-12	LARC	PENNSYLVANIA STATE U	3134	505-06-93	LARC	GEORGE WASHINGTON U	1802
505-03-12	LARC	UNIV ILLINOIS-URBANA	2015	505-07-11	ARC	MASS INST OF TECH	2363
505-03-12	LARC	UNIV TENNESSEE-KNOXV	3226	505-07-11	ARC	MASS INST OF TECH	2420
505-03-12	LARC	VIRGINIA POLY INST	3592	505-07-11	ARC	PRINCETON UNIVERSITY	2672
505-03-32	LERC	UNIV OF PITTSBURGH	3162	505-07-11	ARC	STANFORD UNIVERSITY	1344
505-03-32	LERC	YORK UNIVERSITY	3722	505-07-11	ARC	UNIV OF SANTA CLARA	1634
505-03-33	LERC	STATE U NY-STONY BRK	2903	505-07-11	ARC	UTAH STATE UNIV	3470
505-03-41	LERC	NEW MEX ST U-LAS CR	2712	505-07-12	LARC	MASS INST OF TECH	2371
505-04-11	ARC	PURDUE UNIVERSITY	2049	505-07-12	LARC	MASS INST OF TECH	2414
505-04-11	ARC	UNIV CALIF-BERKELEY	1450	505-07-12	LARC	OHIO UNIVERSITY	3024
505-04-11	ARC	UNIV OF SANTA CLARA	1629	505-07-12	LARC	PRINCETON UNIVERSITY	2660
505-04-11	LERC	CASE WESTERN RESERVE	2983	505-07-22	LARC	GEORGE WASHINGTON U	1800
505-04-11	LERC	CASE WESTERN RESERVE	2991	505-07-22	LARC	UNIV OF KANSAS	2128
505-04-11	LERC	PURDUE UNIVERSITY	2061	505-07-22	LARC	OLD DOMINION UNIV	3555
505-04-11	LERC	UNIV ILLINOIS-URBANA	2007	505-07-23	LARC	VA MILITARY INSTITUT	3589
505-04-21	LERC	MASS INST OF TECH	2367	505-07-41	LARC	TEXAS A&M UNIVERSITY	3322
505-04-22	LERC	STANFORD UNIVERSITY	1311	505-08-10	FRC	COLORADO STATE UNIV	1666
505-04-22	LERC	UNIV OF CINCINNATI	3041	505-08-10	MSFC	UNIV OF DAYTON	3044
505-04-31	LERC	CORNELL UNIVERSITY	2821	505-08-10	MSFC	UNIV TENNESSEE-KNOXV	3213
505-04-31	LERC	UNIV OF CINCINNATI	3040	505-08-10	WFC	VIRGINIA POLY INST	3598
505-04-41	LERC	CAL STATE U-NRTHRDGE	1256	505-08-20	LARC	CHRISTPHR NEWPRT COL	3478
505-04-41	LERC	MISSISSIPPI STATE U	2572	505-08-20	LARC	CHRISTPHR NEWPRT COL	3479
505-04-41	LERC	NORTHWESTERN UNIV	1970	505-08-20	LARC	HAMPTON INSTITUTE	3492
505-04-41	LERC	NORTHWESTERN UNIV	1971	505-08-21	ARC	CAL STATE U-CHICO	1246
505-05-11	LERC	UNIV OF NOTRE DAME	2070	505-08-21	ARC	UNIV SAN FRANCISCO	1620
505-05-11	LERC	UNIV OF TOLEDO	3049	505-08-22	LERC	MASS INST OF TECH	2375
505-05-41	LARC	NEW YORK UNIVERSITY	2839	505-08-22	LERC	MASS INST OF TECH	2425
505-05-41	LARC	OLD DOMINION UNIV	3508	505-08-22	LERC	RENSELAER POLY-NY	2872
505-05-41	LARC	UNIV ILLINOIS-CHICGO	2003	505-08-31	ARC	SAN JOSE STATE UNIV	1284
505-06-11	ARC	CORNELL UNIVERSITY	2797	505-08-31	ARC	UNIV OF AKRON	3025
505-06-11	LARC	OLD DOMINION UNIV	3541	505-10-11	LARC	MISSISSIPPI STATE U	2574
505-06-11	LARC	OLD DOMINION UNIV	3542	505-10-11	LARC	NO CAROLINA STATE U	2959
505-06-11	LARC	POLY INST OF NY	2858	505-10-11	LARC	OHIO STATE UNIV	3019
505-06-11	LARC	UNIV OF KANSAS	2127	505-10-11	LARC	PRINCETON UNIVERSITY	2678
505-06-12	ARC	STANFORD UNIVERSITY	1372	505-10-11	LARC	UNIV OF KANSAS	2122
505-06-12	ARC	UNIV OF HOUSTON	3350	505-10-11	LARC	UNIV OF KANSAS	2129
505-06-13	ARC	COLORADO STATE UNIV	1671	505-10-11	LARC	WICHITA STATE UNIV	2135
505-06-13	ARC	UNIV ARKANSAS-FAYETV	1177	505-10-11	LARC	WICHITA STATE UNIV	2137
505-06-15	ARC	UNIV ARKANSAS-LTL RK	1179	505-10-12	ARC	UNIV MICH-ANN ARBOR	2505
505-06-15	ARC	UNIV OF WASHINGTON	3642	505-10-21	LARC	CAL STATE U-LG BEACH	1253
505-06-15	LARC	OLD DOMINION UNIV	3537	505-10-21	LARC	MASS INST OF TECH	2407
505-06-15	LARC	UNIV OF HOUSTON	3364	505-10-21	LARC	UNIV WISC-MILWAUKEE	3705
505-06-23	ARC	TUFTS UNIVERSITY	2441	505-10-22	ARC	MASS INST OF TECH	2333
505-06-31	LARC	MISSISSIPPI STATE U	2573	505-10-22	ARC	MASS INST OF TECH	2419
505-06-31	LARC	NEW YORK UNIVERSITY	2840	505-10-22	ARC	PRINCETON UNIVERSITY	2681
505-06-31	LARC	TEXAS A&M UNIVERSITY	3326	505-10-24	LARC	DUKE UNIVERSITY	2936
505-06-31	LARC	UNIV MICH-ANN ARBOR	2491	505-10-24	LARC	UNIV OF VIRGINIA	3573
505-06-31	LARC	WICHITA STATE UNIV	2134	505-10-26	LARC	GEORGIA INST OF TECH	1910
505-06-41	LARC	ILL INST OF TECH	1957	505-10-26	LARC	UNIV CALIF-L ANGELES	1537
505-06-42	ARC	IOWA STATE UNIV	2080	505-10-26	LARC	UNIV OF KANSAS	2126
505-06-42	ARC	UNIV OF SANTA CLARA	1637	505-10-26	LARC	UNIV TENNESSEE-KNOXV	3228
505-06-42	ARC	UNIV OF WASHINGTON	3645	505-10-26	LARC	VIRGINIA POLY INST	3618

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505-10-35	LARC	OLD DOMINION UNIV	3549	506-18-21	LARC	WASHINGTON UNIVERSITY	2607
505-10-41	ARC	STANFORD UNIVERSITY	1390	506-19-15	ARC	STANFORD UNIVERSITY	1340
505-10-41	LARC	POLY INST OF NY	2860	506-20-31	HQ	MASS INST OF TECH	2358
505-10-41	LARC	UNIV OF VIRGINIA	3579	506-20-31	HQ	STANFORD UNIVERSITY	1347
505-11-11	LARC	MICHIGAN STATE UNIV	2458	506-20-33	GSFC	HARVARD UNIVERSITY	2309
505-11-12	ARC	NEW YORK UNIVERSITY	2845	506-20-33	GSFC	UNIV MARYLAND-COL PK	2277
505-11-21	LARC	PURDUE UNIVERSITY	2054	506-20-33	HQ	UNIV CALIF-BERKELEY	1437
505-11-22	LARC	AUBURN UNIV-AUBURN	1030	506-21-30	LARC	COLLEGE OF WM & MARY	3490
505-17-00	ARC	POLY INST OF NY	2853	506-21-30	LARC	VIRGINIA POLY INST	3623
505-90-81	ARC	UNIV CALIF-L ANGELES	1529	506-21-40	LERC	PRINCETON UNIVERSITY	2675
505-90-82	LARC	GEORGE WASHINGTON U	1794	506-21-41	LERC	COLORADO STATE UNIV	1682
505-90-82	LARC	NO CAROLINA STATE U	2965	506-21-41	LERC	CORNELL UNIVERSITY	2815
505-90-82	LARC	OLD DOMINION UNIV	3516	506-21-41	LERC	CORNELL UNIVERSITY	2816
505-90-82	LARC	UNIV OF CINCINNATI	3030	506-21-53	LERC	CAL STATE U-SACRAMEN	1259
505-90-82	LARC	UNIV COLORADO-BOLDR	1723	506-21-53	LERC	CASE WESTERN RESERVE	2989
505-90-82	LARC	VIRGINIA POLY INST	3600	506-21-53	LERC	GEORGIA INST OF TECH	1919
505-90-9X	LERC	CASE WESTERN RESERVE	2992	506-21-53	LERC	PENNSYLVANIA STATE U	3127
506-00-00	ARC	COLORADO STATE UNIV	1672	506-21-53	LERC	TENNESSEE TECH U	3209
506-00-00	ARC	STANFORD UNIVERSITY	1322	506-21-53	LERC	TULANE UNIVERSITY	2183
506-00-00	ARC	STANFORD UNIVERSITY	1329	506-21-53	LERC	UNIV COLORADO-BOLDR	1715
506-16-11	ARC	STANFORD UNIVERSITY	1333	506-21-53	LERC	VIRGINIA POLY INST	3619
506-16-11	ARC	UNIV CALIF-BERKELEY	1433	506-21-68	LARC	COLORADO STATE UNIV	1678
506-16-11	ARC	UNIV CALIF-L ANGELES	1505	506-22-40	LERC	U MINN-MNPLS-ST PAUL	2548
506-16-11	ARC	UNIV MO-ROLLA	2592	506-22-41	LERC	COLORADO STATE UNIV	1689
506-16-12	ARC	UNIV CALIF-DAVIS	1478	506-22-42	HQ	PRINCETON UNIVERSITY	2656
506-16-12	ARC	UNIV OREGON-EUGENE	3082	506-23-15	GSFC	DUKE UNIVERSITY	2933
506-16-12	LERC	RENSSELAER POLY-NY	2876	506-23-18	GSFC	UNIV OF FLORIDA	1862
506-16-13	LARC	CARNEGIE-MELLON UNIV	3090	506-23-24	LERC	UNIV OF FLORIDA	1849
506-16-13	LARC	GREENVILLE COLLEGE	1955	506-23-30	LERC	COLORADO STATE UNIV	1688
506-16-13	LARC	MASS INST OF TECH	2415	506-23-30	LERC	HARVARD UNIVERSITY	2312
506-16-13	LARC	SOUTHERN METHODIST U	3292	506-24-11	LARC	PRINCETON UNIVERSITY	2679
506-16-14	LERC	RENSSELAER POLY-NY	2868	506-24-14	LERC	UNIV OF KENTUCKY	2149
506-16-14	LERC	RICE UNIVERSITY	3279	506-24-21	LERC	OREGON GRADUATE CTR	3072
506-16-14	LERC	UNIV OF WASHINGTON	3638	506-25-11	LERC	BRIGHAM YOUNG UNIV	3448
506-16-21	LARC	GEORGE WASHINGTON U	1801	506-25-11	LERC	CASE WESTERN RESERVE	2975
506-16-21	LERC	CARNEGIE-MELLON UNIV	3088	506-25-11	LERC	RENSSELAER POLY-NY	2877
506-16-21	LERC	CARNEGIE-MELLON UNIV	3089	506-25-11	LERC	UNIV SOUTHWESTERN LA	2187
506-16-21	LERC	CARNEGIE-MELLON UNIV	3091	506-25-11	LERC	UNIV OF WASHINGTON	3641
506-16-21	LERC	UNIV CALIF-BERKELEY	1461	506-25-11	HQ	UNIV CALIF-SAN DIEGO	1595
506-16-22	LERC	GEORGIA INST OF TECH	1905	506-25-21	LERC	VANDERBILT UNIVERSITY	3238
506-16-22	LERC	UNIV CALIF-L ANGELES	1533	506-25-31	LARC	STANFORD UNIVERSITY	1405
506-16-31	ARC	COLORADO STATE UNIV	1679	506-25-31	HQ	STANFORD UNIVERSITY	1396
506-16-31	ARC	GEORGIA INST OF TECH	1916	506-25-32	ARC	UNIV OF ARIZONA	1124
506-16-31	ARC	UNIV OF NEW MEXICO	2735	506-25-32	ARC	UNIV CALIF-BERKELEY	1460
506-16-32	LARC	PENNSYLVANIA STATE U	3135	506-25-32	ARC	CORNELL UNIVERSITY	2798
506-16-35	MSFC	ATHENS COLLEGE	1010	506-25-55	LARC	STANFORD UNIVERSITY	1395
506-16-42	ARC	STANFORD UNIVERSITY	1383	506-25-61	ARC	STANFORD UNIVERSITY	1339
506-17-11	LARC	VIRGINIA POLY INST	3617	506-26-21	ARC	UNIV TEXAS-ARLINGTON	3365
506-17-14	LERC	MASS INST OF TECH	2423	506-26-22	ARC	VIRGINIA POLY INST	3622
506-17-21	LARC	UNIV MARYLAND-COL PK	2272	506-26-30	LARC	STANFORD UNIVERSITY	1337
506-17-32	LARC	UNIV OF UTAH	3465	506-26-31	ARC	BROOKLYN COLLEGE	2738
506-18-12	LARC	CHESAPEAKE COLLEGE	2196	506-90-21	LARC	SYRACUSE UNIVERSITY	2920
506-18-12	LARC	OLD DOMINION UNIV	3557	506-90-21	LARC	UNIV MICH-ANN ARBOR	2504
506-18-21	LARC	COLLEGE OF WM & MARY	3488	506-90-21	LARC	UNIV OF SO FLORIDA	1874
506-18-21	LARC	NO CAROLINA STATE U	2960	506-90-21	LARC	UNIV WISC-MADISON	3700
506-18-21	LARC	NO CAROLINA STATE U	2964	506-90-21	LERC	MASS INST OF TECH	2426
506-18-21	LARC	RENSSELAER POLY-NY	2874	506-90-21	LERC	UNIV OF NOTRE DAME	2071
506-18-21	LARC	STANFORD UNIVERSITY	1388	506-91-10	LERC	UNIV ILLINOIS-URBANA	2022

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512-51-02	LARC	MASS INST OF TECH	2413	639-10-00	MSFC	OHIO STATE UNIV	3007
512-51-02	LARC	VIRGINIA POLY INST	3607	639-10-00	MSFC	UNIV ALA-HUNTSVILLE	1066
512-53-01	LARC	CLEMSON UNIV-CLEMSON	3186	640-00-00	JSC	NEW MEX ST U-LAS CR	2703
512-53-01	LARC	PRINCETON UNIVERSITY	2646	640-04-04	JSC	NEW MEX ST U-LAS CR	2704
512-53-01	LARC	RENSELAER POLY-NY	2875	640-04-04	JSC	TEXAS A&M UNIVERSITY	3315
512-53-01	LARC	UNIV COLORADO-BOLDR	1724	640-04-04	JSC	UNIV TEXAS-AUSTIN	3378
512-53-01	LARC	UNIV COLORADO-BOLDR	1725	641-00-00	GSFC	CORNELL UNIVERSITY	2789
512-53-03	FRC	LEHIGH UNIVERSITY	3107	641-00-00	GSFC	OREGON STATE UNIV	3073
512-53-03	FRC	PURDUE UNIVERSITY	2063	641-00-00	GSFC	UNIV OF IOWA	2098
513-50-53	ARC	UNIV CALIF-BERKELEY	1467	641-00-00	GSFC	UNIV OF WYOMING	3711
513-52-01	LARC	GEORGE WASHINGTON U	1803	641-14-01	GSFC	PURDUE UNIVERSITY	2042
513-52-01	LARC	OHIO STATE UNIV	3011	641-14-01	GSFC	PURDUE UNIVERSITY	2043
513-52-01	LARC	STANFORD UNIVERSITY	1387	641-14-01	GSFC	TEXAS A&M UNIVERSITY	3300
513-52-01	LARC	UNIV OF VIRGINIA	3562	641-14-01	GSFC	UNIV ALASKA-FAIRBNKS	1089
513-52-01	LARC	UNIV OF VIRGINIA	3582	641-14-01	GSFC	UNIV OF ARIZONA	1109
513-52-01	LARC	UNIV OF VIRGINIA	3583	641-14-01	GSFC	UNIV CALIF-BERKELEY	1414
513-52-01	LARC	YOUNGSTOWN STATE U	3056	641-14-01	GSFC	UNIV NEBRASKA-LINCLN	2614
513-53-05	ARC	STHN COLORADO ST COL	1691	641-14-01	GSFC	COLORADO SCH OF MINE	1658
513-53-05	ARC	STANFORD UNIVERSITY	1382	641-14-03	GSFC	STANFORD UNIVERSITY	1315
513-53-06	ARC	CAL STATE U-SACRAMEN	1258	641-14-03	GSFC	UNIV OF KANSAS	2111
514-51-01	ARC	PRINCETON UNIVERSITY	2647	641-14-07	GSFC	PENNSYLVANIA STATE U	3112
514-52-01	ARC	CALIF INST OF TECH	1208	641-14-07	GSFC	PURDUE UNIVERSITY	2044
514-52-01	ARC	HARVEY MUDD COLLEGE	1262	641-14-07	GSFC	UNIV OF ARIZONA	1108
514-52-01	ARC	HARVEY MUDD COLLEGE	1263	641-14-07	GSFC	UNIV MARYLAND-COL PK	2282
514-52-01	ARC	IOWA STATE UNIV	2083	641-14-08	WFC	ST LAWRENCE UNIV	2880
514-52-01	ARC	UNIV CALIF-L ANGELES	1544	641-14-20	GSFC	NEW MEX INST MINING	2695
516-51-01	FRC	UNIV CALIF-L ANGELES	1495	641-15-00	GSFC	PURDUE UNIVERSITY	2040
599-85-00	LARC	VIRGINIA POLY INST	3604	641-15-00	GSFC	SO DAKOTA STATE UNIV	3194
599-85-00	HQ	HAMPTON INSTITUTE	3494	641-15-00	GSFC	TEXAS A&M UNIVERSITY	3298
601-13-00	GSFC	UNIV WISC-MADISON	3677	641-15-00	GSFC	UNIV ALASKA-FAIRBNKS	1086
604-00-00	GSFC	MASS INST OF TECH	2339	641-15-00	GSFC	UNIV ALASKA-FAIRBNKS	1087
607-00-00	GSFC	FAIRFIELD UNIVERSITY	1742	641-15-00	GSFC	UNIV ALASKA-FAIRBNKS	1088
607-06-00	LARC	TENNESSEE TECH U	3208	641-15-00	GSFC	UNIV ARKANSAS-FAYETV	1175
607-06-00	LARC	UNIV OF UTAH	3460	641-15-00	GSFC	UNIV CALIF-BERKELEY	1412
607-07-00	WFC	PENNSYLVANIA STATE U	3113	641-15-00	GSFC	UNIV COLORADO-BOLDR	1696
607-07-00	WFC	UNIV OF DAYTON	3043	641-15-00	GSFC	UNIV COLORADO-BOLDR	1697
607-07-00	WFC	UNIV OF UTAH	3452	641-15-00	GSFC	UNIV OF DELAWARE	1764
607-07-00	WFC	UNIV OF UTAH	3453	641-15-00	GSFC	UNIV OF KANSAS	2110
607-07-00	WFC	UNIV OF UTAH	3454	641-15-00	GSFC	UNIV NEBRASKA-LINCLN	2613
608-21-00	GSFC	DUKE UNIVERSITY	2932	641-15-00	GSFC	UNIV OF UTAH	3451
610-11-00	GSFC	UNIV CALIF-L ANGELES	1522	641-15-00	GSFC	UNIV OF VIRGINIA	3564
610-22-00	LERC	UNIV MICH-ANN ARBOR	2462	642-12-00	LARC	OLD DOMINION UNIV	3530
611-13-00	GSFC	COLUMBIA UNIVERSITY	2757	642-12-00	LARC	OLD DOMINION UNIV	3544
611-13-00	GSFC	MASS INST OF TECH	2392	642-12-00	LARC	UNIV OF WYOMING	3709
611-13-00	GSFC	NEW YORK UNIVERSITY	2851	643-00-00	GSFC	UNIV TEXAS-AUSTIN	3367
611-13-00	GSFC	POLY INST OF NY	2863	643-10-00	GSFC	VIRGINIA POLY INST	3594
611-13-00	GSFC	UNIV CALIF-L ANGELES	1530	643-10-01	GSFC	CITY COLLEGE OF N Y	2751
611-13-00	GSFC	UNIV ILLINOIS-URBANA	2005	643-10-01	GSFC	GEORGIA INST OF TECH	1920
611-13-00	GSFC	UNIV MARYLAND-COL PK	2256	643-10-01	GSFC	OHIO STATE UNIV	3005
611-13-00	GSFC	UNIV WISC-MADISON	3681	643-10-01	GSFC	WASHINGTON UNIVERSTY	2598
611-13-00	GSFC	UNIV WISC-MADISON	3696	643-10-01	GSFC	UNIV OF TOLEDO	3045
630-00-00	GSFC	STANFORD UNIVERSITY	1312	643-60-01	LERC	PURDUE UNIVERSITY	2064
630-00-00	GSFC	VIRGINIA POLY INST	3602	643-60-11	GSFC	TEXAS A&M UNIVERSITY	3318
630-52-00	LARC	MASS INST OF TECH	2331	644-01-01	JSC	MASS INST OF TECH	2356
630-52-00	LARC	NEW YORK UNIVERSITY	2832	644-01-02	HQ	PENNSYLVANIA STATE U	3111
636-18-00	GSFC	OHIO STATE UNIV	3012	644-01-03	GSFC	TEXAS TECH UNIV	3330
638-10-00	LARC	UNIV OF DENVER	1738	644-01-12	JSC	AUBURN UNIV-AUBURN	1027
639-10-00	GSFC	MASS INST OF TECH	2340	644-02-02	MSFC	MISSISSIPPI STATE U	2568

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644-02-02	WFC	VIRGINIA POLY INST	3596	653-00-00	GSFC	UNIV MARYLAND-COL PK	2276
644-03-06	ARC	UNIV CALIF-BERKELEY	1428	656-11-02	GSFC	BROWN UNIVERSITY	3177
644-04-02	LERC	UNIV OF DAYTON	3042	656-23-01	MSFC	AUBURN UNIV-AUBURN	1024
644-04-03	GSFC	U TENNESSEE-MEMPHIS	3232	656-23-01	MSFC	GEORGIA INST OF TECH	1893
644-04-06	LERC	GEORGIA INST OF TECH	1885	656-23-01	MSFC	GEORGIA INST OF TECH	1900
645-10-01	MSFC	UNIV ALA-HUNTSVILLE	1068	656-23-01	MSFC	MISSISSIPPI STATE U	2566
645-10-01	MSFC	UNIV MO-ROLLA	2591	656-42-01	MSFC	STATE UNIV NY-BUFFAL	2889
645-10-01	MSFC	UNIV OF NEVADA-RENO	2623	658-10-20	JSC	CLEMSON UNIV-CLEMSON	3182
645-10-02	GSFC	UNIV OF KANSAS	2112	658-10-20	JSC	COLORADO STATE UNIV	1670
645-10-03	GSFC	UNIV MO-COLUMBIA	2583	658-10-20	JSC	KANSAS STATE UNIV	2103
645-20-01	LARC	OLD DOMINION UNIV	3534	658-10-20	JSC	TEXAS A&M UNIVERSITY	3309
645-20-01	LARC	OLD DOMINION UNIV	3546	658-10-20	JSC	TEXAS A&M UNIVERSITY	3313
645-20-01	LARC	STANFORD UNIVERSITY	1386	658-10-20	JSC	UNIV CALIF-BERKELEY	1424
645-20-01	LARC	UNIV MARYLAND-COL PK	2269	681-01-01	GSFC	STANFORD UNIVERSITY	1316
645-20-01	LARC	UNIV MARYLAND-COL PK	2271	683-00-00	LARC	UNIV OF WYOMING	3707
645-20-01	LARC	UNIV WISC-MADISON	3699	683-74-16	GSFC	UNIV OF FLORIDA	1861
645-25-07	GSFC	OHIO STATE UNIV	3004	683-74-26	GSFC	UNIV OF ARIZONA	1162
645-25-07	GSFC	UNIV OF PENNSYLVANIA	3143	683-75-31	GSFC	UNIV OF KANSAS	2113
645-40-05	GSFC	UNIV OF SOUTHERN CAL	1645	684-30-90	MSFC	AUBURN UNIV-AUBURN	1021
645-50-01	LARC	OLD DOMINION UNIV	3514	684-68-61	HQ	PRINCETON UNIVERSITY	2690
645-50-01	LARC	OLD DOMINION UNIV	3520	697-00-00	GSFC	FEDERAL CITY COLLEGE	1781
646-22-00	GSFC	UNIV CALIF-SAN DIEGO	1557	721-00-00	ARC	STANFORD UNIVERSITY	1368
646-22-00	GSFC	UNIV OF CHICAGO	1990	721-00-00	LARC	OLD DOMINION UNIV	3512
646-22-00	GSFC	U MINN-MNPLS-ST PAUL	2528	721-00-00	LARC	PENNSYLVANIA STATE U	3125
646-22-00	GSFC	UNIV NEW HAMPSHIRE	2632	721-00-00	LARC	UNIV OF WASHINGTON	3639
647-10-01	MSFC	UNIV OF GEORGIA	1934	721-00-00	LARC	UNIV OF WASHINGTON	3640
647-10-02	MSFC	BALL STATE UNIVERSTY	2026	723-01-01	LARC	CITY COLLEGE OF N Y	2750
647-10-02	MSFC	BALL STATE UNIVERSTY	2027	723-01-01	LARC	UNIV OF ROCHESTER	2925
647-20-01	GSFC	COLORADO STATE UNIV	1664	743-01-01	LARC	UNIV OF CINCINNATI	3036
647-20-01	GSFC	UNIV OF MIAMI	1863	743-01-11	LARC	BOSTON UNIVERSITY	2295
647-40-01	MSFC	MEMPHIS ST UNIV	3199	743-01-11	LARC	ISRAEL INST OF TECH	3724
647-40-01	MSFC	TENNESSEE TECH U	3206	743-02-22	ARC	UNIV SAN FRANCISCO	1621
647-40-01	MSFC	UNIV ALA-HUNTSVILLE	1067	743-02-22	LERC	MASS INST OF TECH	2377
647-90-02	LERC	UNIV OF PITTSBURGH	3164	743-03-11	LERC	UNIV MISS-UNIVERSITY	2576
650-60-10	ARC	KANSAS STATE UNIV	2104	743-04-31	LARC	CORNELL UNIVERSITY	2817
650-60-10	ARC	STANFORD UNIVERSITY	1335	743-04-31	LARC	NEW YORK UNIVERSITY	2838
650-60-11	GSFC	UNIV OF PENNSYLVANIA	3146	743-34-22	GSFC	SAN DIEGO STATE UNIV	1269
650-60-12	GSFC	CASE WESTERN RESERVE	2984	750-01-10	LARC	OLD DOMINION UNIV	3556
650-60-12	GSFC	UNION COLLEGE	2921	750-01-51	LERC	CASE WESTERN RESERVE	2990
652-01-82	JSC	MICHIGAN STATE UNIV	2455	750-01-51	LERC	NEW YORK UNIVERSITY	2847
652-01-82	JSC	MISSISSIPPI STATE U	2567	750-01-51	LERC	STATE U NY-STONY BRK	2910
652-01-82	JSC	UNIV CALIF-BERKELEY	1421	750-01-51	LERC	UNIV CALIF-SAN DIEGO	1594
652-01-82	JSC	UNIV OF KANSAS	2116	750-01-51	LERC	UNIV ILLINOIS-URBANA	2021
652-01-83	JSC	COLORADO SCH OF MINE	1659	750-02-01	LARC	MARY BALDWIN COLLEGE	3501
652-01-83	JSC	DARTMOUTH COLLEGE	2625	750-02-01	LARC	NO CAROLINA STATE U	2961
652-01-83	JSC	PENNSYLVANIA STATE U	3116	750-02-01	LARC	NO CAROLINA STATE U	2962
652-01-83	JSC	SO ILL UNIV-CARBONDL	1972	759-00-00	LERC	UNIV OF PITTSBURGH	3149
652-01-83	JSC	UNIV OF IOWA	2099	759-11-43	LERC	UNIV ILLINOIS-URBANA	2016
652-01-83	JSC	UNIV OF UTAH	3457	760-16-00	ARC	UNIV CALIF-BERKELEY	1425
652-01-83	JSC	UNIV OF WYOMING	3712	760-17-00	ARC	PRINCETON UNIVERSITY	2648
652-01-84	JSC	CITY COLLEGE OF N Y	2743	760-17-00	ARC	WASHINGTON UNIVERSTY	2597
652-01-84	JSC	UNIV OKLAHOMA-NORMAN	3069	760-61-01	ARC	TUFTS UNIVERSITY	2439
652-01-85	JSC	PURDUE UNIVERSITY	2046	760-61-02	LARC	UNIV MO-ROLLA	2595
652-01-85	JSC	PURDUE UNIVERSITY	2047	760-62-01	LARC	OLD DOMINION UNIV	3527
652-01-85	JSC	UNIV CALIF-BERKELEY	1422	760-63-00	LARC	UNIV ILLINOIS-URBANA	2008
652-01-86	JSC	LONG ISLAND UNIV	2829	760-63-02	ARC	MASS INST OF TECH	2332
652-01-86	JSC	UNIV OF KANSAS	2115	760-63-02	LARC	UNIV OF KANSAS	2107
653-00-00	GSFC	COLUMBIA UNIVERSITY	2768	760-63-03	LARC	OLD DOMINION UNIV	3536
653-00-00	GSFC	UNIV CALIF-SAN DIEGO	1588	760-64-60	LARC	NEW YORK UNIVERSITY	2846

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760-64-60	LARC	OLD DOMINION UNIV	3543	815-20-00	LARC	UNIV OF HOUSTON	3331
760-64-60	LARC	OLD DOMINION UNIV	3548	815-20-00	LARC	U MINN-MNPLS-ST PAUL	2519
766-72-01	FRC	UNIV CALIF-L ANGELES	1494	815-20-00	LARC	UNIV OF NEW MEXICO	2713
766-75-02	LARC	VIRGINIA POLY INST	3610	815-20-00	LARC	UNIV TEXAS-DALLAS	3407
768-81-02	LARC	SOUTHERN METHODIST U	3291	815-20-00	LARC	UNIV OF UTAH	3449
770-00-00	LERC	TEXAS A&M UNIVERSITY	3295	815-20-00	LARC	UNIV OF WASHINGTON	3632
770-18-01	LERC	GEORGIA INST OF TECH	1882	815-20-00	LARC	WASHINGTON UNIVERSTY	2596
770-18-01	LERC	NEW YORK UNIVERSITY	2844	819-00-00	ARC	IOWA STATE UNIV	2073
770-18-01	LERC	UNIV OF NEW MEXICO	2714	820-08-00	HQ	UNIV OF PITTSBURGH	3166
770-18-01	LERC	UNIV OF NEW MEXICO	2715	821-22-00	GSFC	MASS INST OF TECH	2337
770-18-01	LERC	UNIV OF SO ALABAMA	1085	821-22-00	GSFC	UNIV CALIF-SAN DIEGO	1555
770-18-01	LERC	WEST VIRGINIA UNIV	3659	821-22-00	GSFC	UNIV CALIF-SAN DIEGO	1556
770-18-10	FRC	UNIV OF KANSAS	2130	821-32-00	GSFC	COLUMBIA UNIVERSITY	2756
778-11-02	ARC	UNIV NEBRASKA-LINCLN	2619	821-32-00	GSFC	COLUMBIA UNIVERSITY	2759
778-60-03	JSC	UNIV OF HOUSTON	3343	821-32-00	GSFC	UNIV COLORADO-BOLDR	1694
790-91-02	ARC	UNIV OF SANTA CLARA	1633	821-32-00	GSFC	UNIV COLORADO-BOLDR	1698
791-40-03	ARC	MASS INST OF TECH	2334	821-32-00	GSFC	UNIV MARYLAND-COL PK	2230
791-40-03	ARC	MASS INST OF TECH	2417	821-32-00	GSFC	UNIV MARYLAND-COL PK	2231
791-40-03	ARC	UNIV MICH-ANN ARBOR	2506	821-32-00	GSFC	UNIV WISC-MADISON	3672
791-40-10	HQ	PRINCETON UNIVERSITY	2687	821-32-00	GSFC	UNIV WISC-MADISON	3679
791-40-10	HQ	W VA COL GRAD STUDY	3658	823-12-00	GSFC	UNIV OF IOWA	2093
791-40-15	ARC	UNIV CALIF-L ANGELES	1506	823-12-00	GSFC	U MINN-MNPLS-ST PAUL	2526
791-91-51	HQ	MASS INST OF TECH	2355	825-20-00	ARC	UNIV OF ARIZONA	1105
791-93-03	ARC	CAL STATE U-SACRAMEN	1257	825-20-00	ARC	UNIV OF ARIZONA	1106
791-93-03	ARC	STANFORD UNIVERSITY	1309	825-20-00	ARC	UNIV CALIF-L ANGELES	1493
791-93-03	ARC	UNIV CALIF-BERKELEY	1407	825-20-00	ARC	UNIV COLORADO-BOLDR	1693
791-93-23	ARC	PRINCETON UNIVERSITY	2680	825-20-00	ARC	U MINN-MNPLS-ST PAUL	2523
802-31-00	GSFC	CORNELL UNIVERSITY	2790	825-20-00	ARC	UNIV TEXAS-DALLAS	3408
802-31-00	GSFC	UNIV MARYLAND-COL PK	2224	825-20-00	ARC	UNIV TEXAS-DALLAS	3409
811-22-00	ARC	BRIGHAM YOUNG UNIV	3443	825-20-00	ARC	UNIV WISC-MADISON	3671
811-22-00	ARC	CALIF INST OF TECH	1185	826-12-00	GSFC	COLUMBIA UNIVERSITY	2758
811-22-00	ARC	NEW YORK UNIVERSITY	2834	826-12-00	GSFC	HARVARD UNIVERSITY	2302
811-22-00	ARC	UNIV OF ARIZONA	1102	826-12-00	GSFC	UNIV NEW HAMPSHIRE	2635
811-22-00	ARC	UNIV OF ARIZONA	1103	831-00-00	GSFC	UNIV OF FLORIDA	1858
811-22-00	ARC	UNIV OF ARIZONA	1104	831-00-00	HQ	PRINCETON UNIVERSITY	2691
811-22-00	ARC	UNIV CALIF-L ANGELES	1488	831-00-00	HQ	WESLEYAN UNIVERSITY	1748
811-22-00	ARC	UNIV CALIF-SAN DIEGO	1554	831-42-00	GSFC	BOSTON UNIVERSITY	2296
811-22-00	ARC	UNIV OF CHICAGO	1974	831-42-00	GSFC	JOHNS HOPKINS UNIV	2211
811-22-00	ARC	UNIV OF IOWA	2087	831-42-00	GSFC	JOHNS HOPKINS UNIV	2213
811-22-00	ARC	UNIV OF SOUTHERN CAL	1642	831-42-00	GSFC	PRINCETON UNIVERSITY	2649
811-22-00	ARC	UNIV OF SOUTHERN CAL	1643	831-42-00	GSFC	UNIV CALIF-BERKELEY	1470
811-22-00	GSFC	UNIV MARYLAND-COL PK	2249	831-42-00	GSFC	UNIV CALIF-L ANGELES	1546
811-22-00	GSFC	UNIV NEW HAMPSHIRE	2631	831-42-00	GSFC	UNIV CALIF-L ANGELES	1547
815-20-00	LARC	BROWN UNIVERSITY	3168	831-42-00	GSFC	UNIV OF CHICAGO	2002
815-20-00	LARC	CALIF INST OF TECH	1183	831-42-00	GSFC	UNIV OF DENVER	1741
815-20-00	LARC	CALIF INST OF TECH	1184	831-42-00	GSFC	UNIV OF HAWAII	1951
815-20-00	LARC	CORNELL UNIVERSITY	2785	831-42-00	GSFC	UNIV MARYLAND-COL PK	2280
815-20-00	LARC	FLORIDA STATE UNIV	1835	831-42-00	GSFC	UNIV OF ROCHESTER	2926
815-20-00	LARC	GEORGIA INST OF TECH	1881	831-42-00	GSFC	UNIV TEXAS-AUSTIN	3404
815-20-00	LARC	HARVARD UNIVERSITY	2299	831-42-00	GSFC	UNIV TEXAS-AUSTIN	3405
815-20-00	LARC	MASS INST OF TECH	2328	831-42-00	GSFC	UNIV OF WASHINGTON	3654
815-20-00	LARC	MASS INST OF TECH	2329	831-42-00	JSC	HOUSTON BAPTIST UNIV	3260
815-20-00	LARC	MASS INST OF TECH	2330	831-43-00	GSFC	HARVARD UNIVERSITY	2322
815-20-00	LARC	POMONA COLLEGE	1266	831-43-00	GSFC	JOHNS HOPKINS UNIV	2210
815-20-00	LARC	PRINCETON UNIVERSITY	2645	831-43-00	GSFC	UNIV CALIF-BERKELEY	1463
815-20-00	LARC	STANFORD UNIVERSITY	1305	831-43-00	GSFC	UNIV CALIF-L ANGELES	1541
815-20-00	LARC	STANFORD UNIVERSITY	1306	831-43-00	GSFC	UNIV OF DENVER	1740
815-20-00	LARC	STANFORD UNIVERSITY	1307	831-43-00	GSFC	UNIV NEBRASKA-LINCLN	2620
815-20-00	LARC	STATE U NY-STONY BRK	2895	831-43-00	GSFC	UNIV OF TOLEDO	3048

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831-43-00	GSFC	UNIV OF TOLEDO	3050	863-11-00	LARC	UNIV OF IOWA	2086
832-00-00	GSFC	UNIV OF ARIZONA	1111	863-11-00	LARC	U MINN-MNPLS-ST PAUL	2520
832-00-00	MSFC	COLUMBIA UNIVERSITY	2762	863-11-00	LARC	U MINN-MNPLS-ST PAUL	2521
832-00-00	MSFC	UNIV OF CHICAGO	1980	868-11-00	GSFC	OLD DOMINION UNIV	3559
832-12-00	GSFC	CALIF INST OF TECH	1191	868-11-00	GSFC	UNIV OF WASHINGTON	3634
832-12-00	GSFC	LA STATE U-BAT ROUGE	2163	868-11-00	GSFC	VIRGINIA POLY INST	3603
832-12-00	GSFC	STANFORD UNIVERSITY	1317	868-12-00	GSFC	HARVARD UNIVERSITY	2301
832-12-00	GSFC	UNIV WISC-MADISON	3673	868-12-00	GSFC	JOHNS HOPKINS UNIV	2203
832-12-00	JSC	UNIV CALIF-BERKELEY	1418	868-12-00	GSFC	UNIV COLORADO-BOLDR	1700
832-12-00	MSFC	CALIF INST OF TECH	1192	868-12-00	GSFC	UNIV MARYLAND-COL PK	2228
832-12-00	MSFC	CALIF INST OF TECH	1193	868-13-00	GSFC	UNIV MARYLAND-COL PK	2229
832-12-00	MSFC	COLUMBIA UNIVERSITY	2763	870-42-00	GSFC	UNIV OF IOWA	2092
832-12-00	MSFC	MASS INST OF TECH	2342	874-31-00	GSFC	UNIV MICH-ANN ARBOR	2463
832-12-00	MSFC	MASS INST OF TECH	2343	874-32-00	GSFC	UNIV MICH-ANN ARBOR	2465
832-12-00	MSFC	MASS INST OF TECH	2347	878-12-00	GSFC	MASS INST OF TECH	2338
832-12-00	MSFC	MASS INST OF TECH	2350	878-21-00	GSFC	GEORGE WASHINGTON U	1797
832-12-00	MSFC	UNIV CALIF-SAN DIEGO	1560	879-00-00	HQ	U MINN-MNPLS-ST PAUL	2540
832-12-00	MSFC	U MINN-MNPLS-ST PAUL	2530	879-00-00	HQ	UNIV TEXAS-DALLAS	3426
832-12-00	MSFC	WASHINGTON UNIVERSTY	2600	879-00-00	HQ	UNIV TEXAS-DALLAS	3427
841-00-00	GSFC	RICE UNIVERSITY	3270	879-10-00	WFC	RICE UNIVERSITY	3272
841-00-00	GSFC	UNIV OF ARIZONA	1107	879-11-00	ARC	HARVARD UNIVERSITY	2324
849-00-00	HQ	MASS INST OF TECH	2373	879-11-00	ARC	STANFORD UNIVERSITY	1394
852-21-00	GSFC	UNIV MICH-ANN ARBOR	2467	879-11-00	GSFC	UNIV MICH-ANN ARBOR	2474
852-22-00	GSFC	CORNELL UNIVERSITY	2788	879-11-00	GSFC	UNIV NEW HAMPSHIRE	2634
852-22-00	GSFC	HARVARD UNIVERSITY	2304	879-11-00	WFC	UNIV ILLINOIS-URBANA	2012
852-22-00	GSFC	JOHNS HOPKINS UNIV	2201	879-11-00	HQ	CALIF INST OF TECH	1218
852-22-00	GSFC	UNIV COLORADO-BOLDR	1695	879-11-00	HQ	COLUMBIA UNIVERSITY	2767
852-22-00	GSFC	UNIV MICH-ANN ARBOR	2466	879-11-00	HQ	HARVARD UNIVERSITY	2313
852-22-00	GSFC	UNIV MICH-ANN ARBOR	2473	879-11-00	HQ	JOHNS HOPKINS UNIV	2206
852-22-00	GSFC	U MINN-MNPLS-ST PAUL	2527	879-11-00	HQ	MASS INST OF TECH	2393
852-22-00	GSFC	UNIV TEXAS-DALLAS	3410	879-11-00	HQ	PENNSYLVANIA STATE U	3123
852-22-00	GSFC	UNIV TEXAS-DALLAS	3411	879-11-00	HQ	PENNSYLVANIA STATE U	3130
855-22-00	HQ	OHIO STATE UNIV	3010	879-11-00	HQ	PRINCETON UNIVERSITY	2686
855-33-00	WFC	CITY COLLEGE OF N Y	2741	879-11-00	HQ	UNIV ALASKA-FAIRBNKS	1093
857-12-00	GSFC	UNIV OF IOWA	2091	879-11-00	HQ	UNIV CALIF-BERKELEY	1443
857-12-00	GSFC	U MINN-MNPLS-ST PAUL	2525	879-11-00	HQ	UNIV CALIF-BERKELEY	1445
861-41-00	GSFC	UNIV OF IOWA	2090	879-11-00	HQ	UNIV CALIF-BERKELEY	1449
861-42-00	GSFC	CALIF INST OF TECH	1186	879-11-00	HQ	UNIV OF CHICAGO	1993
861-42-00	GSFC	MASS INST OF TECH	2336	879-11-00	HQ	UNIV COLORADO-BOLDR	1705
861-42-00	GSFC	UNIV OF CHICAGO	1976	879-11-00	HQ	UNIV COLORADO-BOLDR	1707
861-42-00	GSFC	UNIV OF IOWA	2089	879-11-00	HQ	UNIV COLORADO-BOLDR	1709
861-42-00	GSFC	UNIV OF IOWA	2094	879-11-00	HQ	UNIV COLORADO-BOLDR	1719
861-42-00	GSFC	UNIV MARYLAND-COL PK	2220	879-11-00	HQ	UNIV OF HAWAII	1948
861-52-00	GSFC	UNIV CALIF-BERKELEY	1411	879-11-00	HQ	UNIV OF HOUSTON	3359
861-52-00	GSFC	UNIV OF IOWA	2088	879-11-00	HQ	U MINN-MNPLS-ST PAUL	2539
861-52-00	GSFC	UNIV MICH-ANN ARBOR	2470	879-11-00	HQ	U MINN-MNPLS-ST PAUL	2543
861-52-00	GSFC	U MINN-MNPLS-ST PAUL	2529	879-11-00	HQ	UNIV NEW HAMPSHIRE	2639
861-62-00	GSFC	STANFORD UNIVERSITY	1313	879-11-00	HQ	UNIV OF PITTSBURGH	3158
862-12-00	GSFC	CALIF INST OF TECH	1188	879-11-00	HQ	UNIV TEXAS-DALLAS	3420
862-12-00	GSFC	UNIV CALIF-BERKELEY	1409	879-11-00	HQ	UNIV WISC-MADISON	3687
862-12-00	GSFC	UNIV CALIF-BERKELEY	1410	879-11-00	HQ	UNIV WISC-MADISON	3688
862-12-00	GSFC	UNIV CALIF-BERKELEY	1413	879-21-00	GSFC	NEW MEX ST U-LAS CR	2702
862-12-00	GSFC	UNIV CALIF-BERKELEY	1415	879-40-00	ARC	NEW MEX ST U-LAS CR	2700
862-12-00	GSFC	UNIV CALIF-L ANGELES	1497	883-00-00	ARC	U TEX HEALTH CTR-DAL	3437
862-12-00	GSFC	UNIV OF CHICAGO	1977	893-78-56	GSFC	CALIF INST OF TECH	1190
862-12-00	GSFC	UNIV OF IOWA	2095	893-78-56	GSFC	CALIF INST OF TECH	1226
862-12-00	GSFC	UNIV OF IOWA	2096	893-78-56	GSFC	JOHNS HOPKINS UNIV	2208
862-12-00	GSFC	UNIV MARYLAND-COL PK	2221	893-78-56	GSFC	MASS INST OF TECH	2398
863-11-00	LARC	OLD DOMINION UNIV	3558	893-78-56	GSFC	PRINCETON UNIVERSITY	2655

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893-78-56	GSFC	PRINCETON UNIVERSITY	2673	948-63-85	LARC	AMERICAN UNIVERSITY	1767
893-78-56	GSFC	PRINCETON UNIVERSITY	2683	948-63-85	LARC	UNIV OF DELAWARE	1763
893-78-56	GSFC	UNIV COLORADO-BOLDR	1718	948-63-86	JSC	UNIV OF HOUSTON	3338
893-78-56	GSFC	UNIV WISC-MADISON	3680	948-63-86	JSC	UNIV OF KANSAS	2117
893-78-56	MSFC	UNIV WISC-MADISON	3684	948-80-80	JSC	UNIV TEXAS-AUSTIN	3374
893-78-57	MSFC	UNIV OF ARIZONA	1112	948-80-81	JSC	UNIV OF KANSAS	2118
904-00-00	MSFC	MASS INST OF TECH	2341	948-80-81	MSFC	UNIV WISC-MADISON	3682
904-00-00	HQ	OHIO STATE UNIV	3022	948-80-81	WFC	WOODSHOLE OCEAN INST	2450
908-00-00	JSC	UNIV OF UTAH	3462	948-80-82	MSFC	UNIV CALIF-BERKELEY	1416
908-00-00	KSC	UNIV OF FLORIDA	1843	948-90-00	MSFC	GEORGIA INST OF TECH	1890
908-91-00	HQ	MASS INST OF TECH	2395	948-90-00	MSFC	UNIV OF CONNECTICUT	1744
909-44-02	JSC	TUSKEGEE INSTITUTE	1035	948-90-95	MSFC	MASS INST OF TECH	2345
909-44-29	JSC	CITY COLLEGE OF N Y	2744	948-90-95	MSFC	RENSSELAER POLY-NY	2866
909-52-47	MSFC	UNIV MICH-ANN ARBOR	2477	948-90-95	MSFC	UNIV ALA-HUNTSVILLE	1046
909-54-02	MSFC	TENNESSEE TECH U	3207	948-90-95	MSFC	UNIV ALA-HUNTSVILLE	1049
909-54-07	MSFC	UNIV OF SO CAROLINA	3188	948-90-95	MSFC	UNIV ALA-TUSCALOOSA	1077
909-54-13	MSFC	UNIV ALA-HUNTSVILLE	1065	948-90-95	MSFC	UNIV CALIF-L ANGELES	1500
909-54-33	MSFC	AUBURN UNIV-AUBURN	1017	948-90-95	MSFC	UNIV OF SOUTHERN CAL	1646
909-54-38	MSFC	MISSISSIPPI STATE U	2569	948-90-95	MSFC	UNIV WISC-MADISON	3683
909-55-01	MSFC	TEXAS A&M UNIVERSITY	3306	948-90-95	MSFC	UNIV OF HOUSTON	3360
909-55-05	MSFC	AUBURN UNIV-AUBURN	1018	951-00-00	JSC	COLORADO STATE UNIV	1665
909-55-05	MSFC	UNIV TENNESSEE-KNOXV	3214	951-00-00	MSFC	GRAMBLING STATE UNIV	2158
909-55-47	MSFC	UNIV ALA-HUNTSVILLE	1045	951-00-00	MSFC	UNIV ALA-TUSCALOOSA	1080
909-64-09	KSC	UNIV OF ARIZONA	1122	951-00-00	MSFC	UNIV OF ARIZONA	1116
909-64-13	KSC	UNIV OF SO CAROLINA	3189	951-00-00	MSFC	UNIV TENNESSEE-KNOXV	3216
909-64-36	KSC	FLORIDA INST OF TECH	1832	951-00-00	MSFC	UNIV TEXAS-AUSTIN	3369
909-64-42	KSC	GEORGIA INST OF TECH	1901	951-15-00	MSFC	AUBURN UNIV-AUBURN	1015
909-67-45	KSC	UNIV OF FLORIDA	1855	951-15-00	MSFC	UNIV OF NEW ORLEANS	2185
909-72-47	LARC	OLD DOMINION UNIV	3518	951-15-00	MSFC	SO UNIV-BATON ROUGE	2170
909-94-24	HQ	UNIV MARYLAND-COL PK	2244	951-15-00	MSFC	UNIV ALA-HUNTSVILLE	1047
914-00-00	JSC	ARIZONA STATE UNIV	1098	951-15-00	MSFC	UNIV OF FLORIDA	1841
914-00-00	JSC	RICE UNIVERSITY	3277	951-16-00	GSFC	UNIV OF ARIZONA	1110
914-00-00	JSC	UNIV OF HOUSTON	3334	951-16-00	MSFC	UNIV ALA-HUNTSVILLE	1044
914-00-00	JSC	UNIV TEXAS-GALVESTON	3431	953-00-00	KSC	FLORIDA INST OF TECH	1833
914-14-00	JSC	UNIV OF SOUTHERN CAL	1648	953-00-00	KSC	FLORIDA TECH UNIV	1839
914-40-00	ARC	UNIV CALIF-L ANGELES	1489	953-00-00	MSFC	UNIV ALA-HUNTSVILLE	1053
914-40-00	JSC	PURDUE UNIVERSITY	2052	964-50-00	MSFC	UNIV ALA-HUNTSVILLE	1040
914-40-00	JSC	UNIV CALIF-L ANGELES	1518	966-30-00	JSC	BAYLOR COL OF MED	3247
914-40-00	JSC	UNIV OF DELAWARE	1765	966-30-00	JSC	BAYLOR COL OF MED	3249
914-40-00	JSC	UNIV TEXAS-GALVESTON	3435	966-30-00	JSC	UNIV ALASKA-FAIRBNKS	1090
914-49-00	GSFC	STATE UNIV NY-ALBANY	2881	966-30-00	JSC	UNIV CALIF-BERKELEY	1419
914-49-00	JSC	JOHNS HOPKINS UNIV	2205	966-30-00	JSC	UNIV CALIF-BERKELEY	1420
914-49-00	JSC	RICE UNIVERSITY	3274	966-30-00	JSC	UNIV OF PITTSBURGH	3150
914-50-00	JSC	UNIV OF HOUSTON	3354	966-30-00	JSC	UNIV SAN FRANCISCO	1616
914-50-00	JSC	UNIV OREGON-EUGENE	3078	966-30-00	LARC	UNIV OF WYOMING	3708
914-50-00	JSC	UNIV TEXAS-AUSTIN	3383	966-30-00	MSFC	MASS INST OF TECH	2349
924-23-00	JSC	NORTHWESTERN UNIV	1959	966-30-00	MSFC	RENSSELAER POLY-NY	2867
933-00-00	MSFC	GEORGIA INST OF TECH	1889	966-30-00	MSFC	STATE UNIV NY-BUFFAL	2888
933-00-00	MSFC	MISSISSIPPI STATE U	2563	966-30-00	MSFC	UNIV CALIF-L ANGELES	1503
933-50-00	MSFC	UNIV ALA-HUNTSVILLE	1042	966-30-00	MSFC	UNIV ORGEON-HLTH CTR	3083
948-60-90	JSC	BAYLOR COL OF MED	3240	966-40-00	MSFC	GEORGIA INST OF TECH	1895
948-60-90	JSC	HARVARD UNIVERSITY	2306	966-40-00	MSFC	VANDERBILT UNIVERSTY	3237
948-60-91	JSC	BAYLOR COL OF MED	3251	966-60-00	JSC	UNIV OF HOUSTON	3348
948-60-91	JSC	UNIV CALIF-DAVIS	1475	966-60-00	JSC	UNIV SAN FRANCISCO	1615
948-60-91	JSC	UNIV OF LOUISVILLE	2153	970-00-00	ARC	DUKE UNIVERSITY	2931
948-63-82	JSC	SO DAKOTA STATE UNIV	3195	970-00-00	ARC	INDIANA U-INDIANAPLS	2038
948-63-83	JSC	PRESCOTT COLLEGE	1101	970-00-00	ARC	UNIV CALIF-DAVIS	1473
948-63-83	JSC	UNIV OF NEVADA-RENO	2624	970-00-00	ARC	UNIV OF PENNSYLVANIA	3142
948-63-85	JSC	CORNELL UNIVERSITY	2792	970-00-00	ARC	WEST VIRGINIA UNIV	3661

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970-00-00	JSC	UNIV TEX-DENTAL BRCH	3428	970-21-16	ARC	OREGON GRADUATE CTR	3071
970-11-11	HQ	UNIV OF TORONTO	3721	970-21-17	ARC	UNIV OF KENTUCKY	2141
970-14-00	HQ	INDIANA U-BLOOMINGTN	2034	970-21-25	ARC	UNIV CALIF-IRVINE	1487
970-14-00	HQ	UNIV CALIF-SAN FRAN	1605	970-21-25	ARC	UNIV CALIF-SAN FRAN	1603
970-14-01	HQ	COLLEGE OF WM & MARY	3491	970-21-25	ARC	UNIV OF SANTA CLARA	1628
970-14-01	HQ	GEORGE WASHINGTON U	1806	970-21-25	ARC	UNIV WISC-MADISON	3695
970-14-01	HQ	OHIO STATE UNIV	3018	970-21-25	ARC	UNIV WISC-MADISON	3701
970-21-00	ARC	UNIV OF KENTUCKY	2147	970-21-45	ARC	SAN JOSE STATE UNIV	1291
970-21-00	ARC	UNIV WISC-MADISON	3693	970-21-45	ARC	UNIV OF VIRGINIA	3566
970-21-00	ARC	YALE UNIVERSITY	1756	970-21-45	ARC	WRIGHT STATE UNIV	3054
970-21-11	ARC	BAYLOR COL OF MED	3256	970-21-51	ARC	CAL STATE U-HAYWARD	1264
970-21-11	ARC	EMORY UNIVERSITY	1880	970-21-51	ARC	JOHNS HOPKINS UNIV	2207
970-21-11	ARC	INDIANA U-BLOOMINGTN	2033	970-21-51	ARC	STANFORD UNIVERSITY	1321
970-21-11	ARC	MASS INST OF TECH	2366	970-21-51	ARC	STANFORD UNIVERSITY	1338
970-21-11	ARC	MASS INST OF TECH	2391	970-21-51	ARC	UNIV TEXAS-AUSTIN	3403
970-21-11	ARC	MASS INST OF TECH	2403	970-21-52	ARC	MASS INST OF TECH	2384
970-21-11	ARC	MASS INST OF TECH	2408	970-21-52	ARC	UNIV OF FLORIDA	1854
970-21-11	ARC	OHIO STATE UNIV	3017	970-21-53	ARC	NORTHEASTERN UNIV	2435
970-21-11	ARC	ST LOUIS UNIVERSITY	2582	970-21-61	ARC	COLORADO STATE UNIV	1674
970-21-11	ARC	STANFORD UNIVERSITY	1320	970-21-61	ARC	EMORY UNIVERSITY	1877
970-21-11	ARC	STANFORD UNIVERSITY	1330	970-21-61	ARC	EMORY UNIVERSITY	1879
970-21-11	ARC	STANFORD UNIVERSITY	1364	970-21-61	ARC	RICE UNIVERSITY	3269
970-21-11	ARC	TULANE UNIVERSITY	2180	970-21-61	ARC	SAN JOSE STATE UNIV	1295
970-21-11	ARC	TULANE UNIVERSITY	2181	970-21-61	ARC	UNIV CALIF-BERKELEY	1436
970-21-11	ARC	UNIV CALIF-L ANGELES	1539	970-21-61	ARC	UNIV CALIF-DAVIS	1474
970-21-11	ARC	UNIV CALIF-SAN DIEGO	1583	970-21-61	ARC	UNIV CALIF-DAVIS	1480
970-21-11	ARC	UNIV CALIF-SAN FRAN	1601	970-21-61	ARC	UNIV CALIF-DAVIS	1481
970-21-11	ARC	UNIV OF CHICAGO	1997	970-21-61	ARC	UNIV CALIF-DAVIS	1483
970-21-11	ARC	UNIV ILLINOIS-URBANA	2018	970-21-61	ARC	UNIV CALIF-DAVIS	1486
970-21-11	ARC	UNIV OF LOUISVILLE	2154	970-21-61	ARC	UNIV OF FLORIDA	1859
970-21-11	ARC	UNIV OF VERMONT	3475	970-21-61	ARC	UNIV OF HAWAII	1940
970-21-11	ARC	UNIV OF VIRGINIA	3574	970-21-61	ARC	UNIV MICH-ANN ARBOR	2461
970-21-11	ARC	UPPSALA UNIVERSITY	3730	970-21-61	ARC	UNIV MO-COLUMBIA	2588
970-21-11	ARC	VASSAR COLLEGE	2927	970-21-61	ARC	UNIV OF VIRGINIA	3578
970-21-12	ARC	CORNELL UNIVERSITY	2813	970-21-61	ARC	UNIV OF WASHINGTON	3633
970-21-12	ARC	HOWARD UNIVERSITY	1809	970-21-61	ARC	UNIV WISC-MADISON	3668
970-21-12	ARC	SAN FRAN STATE UNIV	1273	970-21-61	ARC	UNIV WISC-MADISON	3670
970-21-12	ARC	STANFORD UNIVERSITY	1354	970-21-61	HQ	STANFORD UNIVERSITY	1385
970-21-12	ARC	UNIV OF SANTA CLARA	1626	970-21-62	ARC	BOWLING GRN STATE U	2971
970-21-12	ARC	UNIV TEXAS-GALVESTON	3434	970-21-62	ARC	UNIV OF HOUSTON	3351
970-21-12	ARC	UNIV OF UTAH	3459	970-21-62	ARC	UNIV OF PENNSYLVANIA	3145
970-21-13	ARC	UNIV CALIF-SAN DIEGO	1568	970-21-63	ARC	STANFORD UNIVERSITY	1308
970-21-14	ARC	HARVARD UNIVERSITY	2315	970-21-63	ARC	UNIV SAN FRANCISCO	1613
970-21-14	ARC	ST LOUIS UNIVERSITY	2580	970-21-63	ARC	UNIV SAN FRANCISCO	1622
970-21-14	ARC	STANFORD UNIVERSITY	1327	970-22-00	ARC	CASE WESTERN RESERVE	2981
970-21-14	ARC	STANFORD UNIVERSITY	1331	970-22-21	ARC	CASE WESTERN RESERVE	2979
970-21-14	ARC	STANFORD UNIVERSITY	1366	970-22-21	ARC	GEORGIA INST OF TECH	1915
970-21-14	ARC	UNIV CALIF-BERKELEY	1453	970-22-21	ARC	KENT STATE UNIV	3002
970-21-14	ARC	UNIV CALIF-DAVIS	1476	970-22-21	ARC	MASS INST OF TECH	2390
970-21-14	ARC	UNIV CALIF-DAVIS	1477	970-22-21	ARC	MASS INST OF TECH	2397
970-21-14	ARC	UNIV CALIF-DAVIS	1482	970-22-21	ARC	MASS INST OF TECH	2404
970-21-14	ARC	UNIV OF NEW MEXICO	2718	970-22-21	ARC	SAN JOSE STATE UNIV	1304
970-21-14	ARC	UNIV SAN FRANCISCO	1618	970-22-21	ARC	TEXAS A&M UNIVERSITY	3320
970-21-14	ARC	WAYNE STATE UNIV	2516	970-22-21	ARC	UNIV CALIF-BERKELEY	1466
970-21-16	ARC	STANFORD UNIVERSITY	1326	970-22-21	ARC	UNIV OF DENVER	1737
970-21-16	ARC	UNIV CALIF-BERKELEY	1432	970-22-21	ARC	UNIV SAN FRANCISCO	1617
970-21-16	ARC	UNIV CALIF-L ANGELES	1509	970-22-23	ARC	SAN JOSE STATE UNIV	1301
970-21-16	ARC	UNIV CALIF-SAN FRAN	1602	970-22-24	ARC	WORCESTER POLY INST	2453
970-21-16	ARC	UNIV CALIF-SAN FRAN	1604	970-22-30	ARC	UNIV MO-ROLLA	2594

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970-23-20	ARC	STANFORD UNIVERSITY	1361	970-51-63	JSC	COLORADO STATE UNIV	1680
970-23-30	ARC	CASE WESTERN RESERVE	2982	970-51-63	JSC	UNIV OF HOUSTON	3342
970-23-30	ARC	COLORADO STATE UNIV	1686	970-51-63	JSC	UNIV OF HOUSTON	3352
970-23-30	ARC	STANFORD UNIVERSITY	1371	970-52-00	JSC	OLD DOMINION UNIV	3509
970-23-30	ARC	STANFORD UNIVERSITY	1380	970-52-21	JSC	RICE UNIVERSITY	3275
970-23-30	ARC	STANFORD UNIVERSITY	1392	970-52-21	JSC	UNIV MO-COLUMBIA	2586
970-23-30	ARC	UNIV CALIF-SAN DIEGO	1590	970-52-23	JSC	CLEMSON UNIV-CLEMSON	3181
970-23-30	ARC	UNIV MO-COLUMBIA	2589	970-52-24	JSC	TEXAS A&M UNIVERSITY	3307
970-23-30	ARC	UNIV WISC-MADISON	3691	970-52-24	JSC	UNIV OF HOUSTON	3332
970-24-01	ARC	COLORADO STATE UNIV	1663	970-52-24	JSC	U MINN-MNPLS-ST PAUL	2532
970-24-01	ARC	CORNELL UNIVERSITY	2786	970-52-24	JSC	UNIV NEBRASKA-LINCLN	2616
970-24-01	ARC	STANFORD UNIVERSITY	1324	970-52-24	JSC	TEXAS TECH UNIV	3329
970-24-01	ARC	WRIGHT STATE UNIV	3055	970-53-30	JSC	UNIV OF KENTUCKY	2143
970-24-02	ARC	UNIV CALIF-L ANGELES	1492	970-53-30	JSC	UNIV OF HOUSTON	3344
970-24-04	ARC	PRINCETON UNIVERSITY	2682	970-53-50	JSC	BRYN MAWR COLLEGE	3085
970-51-11	JSC	BAYLOR COL OF MED	3242	970-54-01	JSC	GEORGIA INST OF TECH	1898
970-51-11	JSC	BAYLOR COL OF MED	3250	970-63-20	MSFC	MASS INST OF TECH	2344
970-51-11	JSC	MIAMI UNIVERSITY	3003	970-63-20	MSFC	UNIV OF MASS-AMHERST	2442
970-51-11	JSC	PENNSYLVANIA STATE U	3129	970-63-20	MSFC	UNIV TENNESSEE-KNOXV	3212
970-51-11	JSC	UNIV TEXAS-GALVESTON	3433	975-00-00	MSFC	UNIV ALA-HUNTSVILLE	1055
970-51-12	JSC	BOSTON UNIVERSITY	2291	975-00-00	MSFC	UNIV OF ARIZONA	1113
970-51-12	JSC	TUFTS UNIVERSITY	2440	975-50-01	ARC	UNIV MARYLAND-COL PK	2273
970-51-12	JSC	U TEX HEALTH CTR-SA	3439	975-50-01	JSC	UNIV OF HOUSTON	3340
970-51-12	JSC	U TEX HEALTH CTR-DAL	3438	975-50-01	LARC	GEORGIA INST OF TECH	1914
970-51-14	JSC	BAYLOR COL OF MED	3241	975-50-01	LARC	OHIO STATE UNIV	3020
970-51-14	JSC	BAYLOR COL OF MED	3244	975-50-01	MSFC	UNIV ALA-HUNTSVILLE	1058
970-51-14	JSC	BAYLOR COL OF MED	3252	975-50-01	MSFC	UNIV ALA-TUSCALOOSA	1082
970-51-14	JSC	HARDING COLLEGE	1174	975-61-00	LARC	OLD DOMINION UNIV	3522
970-51-14	JSC	MASS INST OF TECH	2354	975-72-48	LARC	RICE UNIVERSITY	3285
970-51-14	JSC	STATE UNIV NY-ALBANY	2886	975-72-51	MSFC	UNIV N CAR-CHPL HILL	2968
970-51-14	JSC	UNIV OF WASHINGTON	3635	975-72-51	MSFC	UNIV SAN FRANCISCO	1614
970-51-14	JSC	UNIV WISC-GREEN BAY	3666	975-75-00	MSFC	UNIV ALA-TUSCALOOSA	1073
970-51-15	JSC	BAYLOR COL OF MED	3245	975-90-95	MSFC	TEXAS A&M UNIVERSITY	3305
970-51-15	JSC	BAYLOR COL OF MED	3246	975-90-95	MSFC	UNIV ALA-HUNTSVILLE	1051
970-51-15	JSC	BAYLOR COL OF MED	3253	975-90-95	MSFC	UNIV CALIF-L ANGELES	1502
970-51-15	JSC	BAYLOR COL OF MED	3255	976-00-00	MSFC	CITY COLLEGE OF N Y	2742
970-51-15	JSC	UNIV OF ARIZONA	1120	976-30-00	MSFC	NEW YORK UNIVERSITY	2836
970-51-16	JSC	BAYLOR COL OF MED	3239	981-60-10	JSC	RICE UNIVERSITY	3278
970-51-16	JSC	BAYLOR COL OF MED	3243	981-60-10	MSFC	PENNSYLVANIA STATE U	3140
970-51-16	JSC	BAYLOR COL OF MED	3254	982-00-00	MSFC	WASHINGTON UNIVERSTY	2599
970-51-16	JSC	DARTMOUTH COLLEGE	2626	982-52-00	MSFC	ALABAMA A&M UNIV	1001
970-51-16	JSC	STANFORD UNIVERSITY	1319	983-15-00	MSFC	CALIF INST OF TECH	1195
970-51-16	JSC	ST U NY-UPST MED CTR	2916	983-15-00	MSFC	UNIV OF LOUISVILLE	2152
970-51-16	JSC	UNIV OF MIAMI	1869	984-15-00	MSFC	AUBURN UNIV-AUBURN	1025
970-51-16	JSC	UNIV N CAR-CHPL HILL	2969	984-15-00	MSFC	AUBURN UNIV-AUBURN	1026
970-51-16	JSC	U TEX HEALTH CTR-SA	3440	984-15-00	MSFC	UNIV TEXAS-AUSTIN	3370
970-51-25	JSC	BAYLOR COL OF MED	3248	984-15-00	MSFC	UNIV TEXAS-AUSTIN	3372
970-51-25	JSC	UNIV OF HOUSTON	3337	986-12-00	JSC	TEXAS A&M UNIVERSITY	3314
970-51-25	JSC	UNIV OF HOUSTON	3347	986-15-00	JSC	MEMPHIS ST UNIV	3200
970-51-25	JSC	U TENNESSEE-MEMPHIS	3233	986-15-00	JSC	UNIV OF HOUSTON	3333
970-51-35	JSC	UNIV OF PENNSYLVANIA	3148	986-15-00	JSC	UNIV OF HOUSTON	3341
970-51-45	JSC	UNIV OF NEW ORLEANS	2186	986-15-00	JSC	UNIV TEXAS-AUSTIN	3375
970-51-45	JSC	STANFORD UNIVERSITY	1373	986-15-00	JSC	UNIV TEXAS-AUSTIN	3376
970-51-45	JSC	UNIV MO-COLUMBIA	2587	986-15-00	JSC	VIRGINIA POLY INST	3597
970-51-45	JSC	UNIV TEX-DENTAL BRCH	3429	989-10-00	ARC	HARVARD UNIVERSITY	2323
970-51-51	JSC	UNIV TEXAS-AUSTIN	3390	989-10-00	ARC	MASS INST OF TECH	2416
970-51-62	JSC	TEXAS A&M UNIVERSITY	3308	989-10-00	JSC	HOUSTON BAPTIST UNIV	3261
970-51-62	JSC	UNIV OF HOUSTON	3336	989-13-00	MSFC	COLORADO STATE UNIV	1668

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RTOP NO.	INSTAL- LATION	INSTITUTION	ACC NO.
989-13-00	MSFC	GEORGIA INST OF TECH	1897
989-13-00	MSFC	TEXAS A&M UNIVERSITY	3304
989-13-00	MSFC	UNIV ALA-HUNTSVILLE	1057
989-13-00	MSFC	UNIV ALA-HUNTSVILLE	1064
989-13-00	MSFC	UNIV ALA-TUSCALOOSA	1081
989-13-00	MSFC	UNIV OKLAHOMA-NORMAN	3068
989-15-00	ARC	STANFORD UNIVERSITY	1397
989-15-00	ARC	STATE UNIV NY-ALBANY	2884
989-15-00	ARC	UTAH STATE UNIV	3469
989-15-00	JSC	UNIV MICH-ANN ARBOR	2480
989-15-00	JSC	UNIV MICH-ANN ARBOR	2500
989-15-00	KSC	FLORIDA TECH UNIV	1840
996-00-00	MSFC	CALIF INST OF TECH	1194
996-00-00	MSFC	UNIV ALA-HUNTSVILLE	1041
996-00-00	MSFC	UNIV ALA-HUNTSVILLE	1054
996-00-00	MSFC	UNIV ALA-TUSCALOOSA	1075
996-00-00	MSFC	UNIV OF HAWAII	1941
997-00-00	ARC	FOOTHILL COLLEGE	1261
997-00-00	ARC	MASS INST OF TECH	2418
997-00-00	ARC	OKLAHOMA STATE UNIV	3058
997-00-00	ARC	SAN FRAN STATE UNIV	1274
997-00-00	ARC	STANFORD UNIVERSITY	1310
997-00-00	ARC	STANFORD UNIVERSITY	1323
997-00-00	ARC	STANFORD UNIVERSITY	1332
997-00-00	ARC	STANFORD UNIVERSITY	1334
997-00-00	ARC	STANFORD UNIVERSITY	1343
997-00-00	ARC	UNIV CALIF-L ANGELES	1490
997-00-00	ARC	UNIV CALIF-L ANGELES	1491
997-00-00	ARC	UNIV ILLINOIS-URBANA	2004
997-00-00	ARC	UNIV ILLINOIS-URBANA	2017
997-00-00	ARC	UNIV SAN FRANCISCO	1619
997-00-00	LARC	COLLEGE OF WM & MARY	3481
997-00-00	LARC	COLLEGE OF WM & MARY	3483
997-00-00	LARC	GEORGE WASHINGTON U	1792
997-00-00	LARC	VIRGINIA POLY INST	3621

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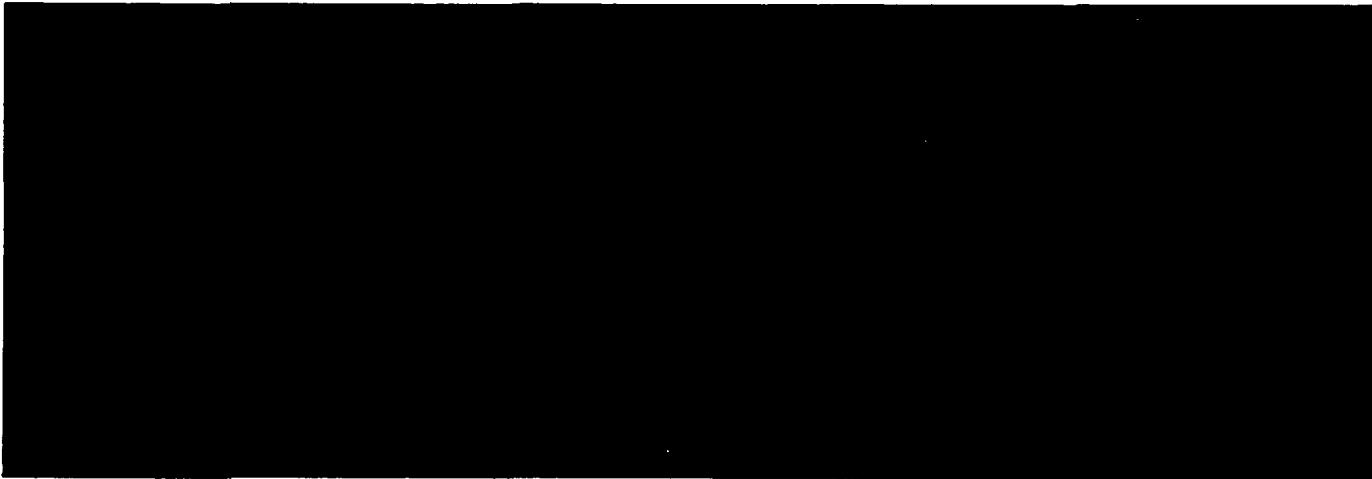
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